08-DHCP

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1. DHCP

bootfile

Syntax	**Bootfile <filename>** **no bootfile**	
Parameter	**<filename>**	name of the file to be imported, up to 255 characters are allowed.
Default	None	
Mode	DHCP Address Pool Mode	
Usage	Specify the name of the file to be imported for the client. This is usually used for diskless workstations that need to download a configuration file from the server on boot up. This command is together with the "next sever".	
Example	The path and filename for the file to be imported is "temp\nos.img" Switch#config Switch(config)#ip dhcp pool 1 Switch(dhcp-1-config)#bootfile \temp\nos.img	

clear ip dhcp binding

Syntax	**clear ip dhcp binding (<A.B.C.D> | all)**	
Parameter	**<A.B.C.D>**	IP address that has a binding record in decimal format
	all	all IP addresses that have a binding record
Default	None	
Mode	Admin Mode	
Usage	"**show ip dhcp binding**" command can be used to view binding information for IP addresses and corresponding DHCP client hardware addresses. If the DHCP server is informed that a DHCP client is not using the assigned IP address for some reason before the lease period expires, the DHCP server would not remove the binding information automatically. The system administrator can use this command to delete that IP address-client hardware address binding manually, if "all" is specified, then all auto binding records will be deleted, thus all addresses in the DHCP address pool will be reallocated.	
Example	Removing all IP-hardware address binding records Switch#clear ip dhcp binding all	

clear ip dhcp conflict

Syntax	**clear ip dhcp binding (<A.B.C.D> | all)**	
Parameter	**<A.B.C.D>**	IP address that has a conflict record;

	all	All stands for all addresses that have conflict records.
Default	None	
Mode	Admin Mode	
Usage	show ip dhcp conflict" command can be used to check which IP addresses are conflicting for use. The "clear ip dhcp conflict" command can be used to delete the conflict record for an address. If "all" is specified, then all conflict records in the log will be removed. When records are removed from the log, the addresses are available for allocation by the DHCP server	
Example	The network administrator finds 10.1.128.160 that has a conflict record in the log and is no longer used by anyone, so he deletes the record from the address conflict log. Switch#clear ip dhcp conflict 10.1.128.160	

clear ip dhcp server statistics

Syntax	**clear ip dhcp server statistics**
Parameter	None
Default	None
Mode	Admin Mode
Usage	DHCP count statistics can be viewed with "**show ip dhcp server statistics**" command, all information is accumulated. You can use the "**clear ip dhcp server statistics**" command to clear the count for easier statistics checking
Example	Clearing the count for DHCP server. Switch#clear ip dhcp server statistics

client-identifier

Syntax	**client-identifier <unique-identifier>** **no client-identifier**
Parameter	**<unique-identifier>** user identifier, in dotted Hex format
Default	None
Mode	DHCP Address Pool Mode
Usage	This command is used with "host" when binding an address manually. If the requesting client identifier matches the specified identifier, DHCP server assigns the IP address defined in "host" command to the client.
Example	Specifying the IP address 10.1.128.160 to be bound to user with the unique id of

	00-10-5a-60-af-12 in manual address binding. Switch#config Switch(config)#ip dhcp pool 1 Switch(dhcp-1-config)#client-identifier 00-10-5a-60-af-12 Switch(dhcp-1-config)#host 10.1.128.160 24

default-router

Syntax	**default-router <A.B.C.D> [<A.B.C.D>[...<A.B.C.D>]]** **no default-router**
Parameter	**<A.B.C.D>** IP addresses, in decimal format.
Default	No default gateway is configured for DHCP clients by default.
Mode	DHCP Address Pool Mode
Usage	The IP address of default gateway(s) should be in the same subnet as the DHCP client IP, the switch supports up to 8 gateway addresses. The gateway address assigned first has the highest priority, and therefore address1 has the highest priority, and address2 has the second, and so on.
Example	Configuring the default gateway for DHCP clients to be 10.1.128.2 and 10.1.128.100. Switch#config Switch(config) # ip dhcp pool 1 Switch(dhcp-1-config)#default-router 10.1.128.2 10.1.128.100

dns-server

Syntax	**dns-server <A.B.C.D> [<A.B.C.D>[...<A.B.C.D>]]** **no dns-server**
Parameter	**<A.B.C.D>** IP addresses, in decimal format.
Default	No DNS server is configured for DHCP clients by default.
Mode	DHCP Address Pool Mode
Usage	Up to 8 DNS server addresses can be configured. The DNS server address assigned first has the highest priority, therefore address 1 has the highest priority, and address 2 has the second, and so on.
Example	Set 10.1.128.2 as the DNS server address for DHCP clients. Switch#config Switch(config) # ip dhcp pool 1 Switch(dhcp-1-config)#dns-server 10.1.128.2

domain-name

Syntax	**domain-name <domain>** **no domain-name**	
Parameter	**<domain>**	domain name, up to 255 characters are allowed.
Default	None	
Mode	DHCP Address Pool Mode	
Usage	Specifies a domain name for the client.	
Example	Specifying “switch.com.cn" as the DHCP clients’ domain name. Switch#config Switch(config)#ip dhcp pool 1 Switch(dhcp-1-config)#domain-name switch.com.cn	

hardware-address

Syntax	**hardware-address <hardware-address> [Ethernet | IEEE802 | *<type-number>*]** **no hardware-address**	
Parameter	**<hardware-address>**	hardware address in Hex
	Ethernet | IEEE802	Ethernet protocol type
	<type-number>	RFC number defined for protocol types, from 1 to 255, e.g., 0 for Ethernet and 6 for IEEE 802.
Default	The default protocol type is Ethernet	
Mode	DHCP Address Pool Mode	
Usage	This command is used with the “host” when binding address manually. If the requesting client hardware address matches the specified hardware address, the DHCP server assigns the IP address defined in “host” command to the client.	
Example	Specify IP address 10.1.128.160 to be bound to the user with hardware address 00-00-e2-3a-26-04 in manual address binding. Switch#config Switch(config)#ip dhcp pool 1 Switch(dhcp-1-config)#hardware 00-00-e2-3a-26-04 Switch(dhcp-1-config)#host 10.1.128.160 24	

host

Syntax	**host *<address>* [*<mask>* | *<prefix-length>*]** **no host**	
Parameter	**<address>**	IP address in decimal format
	<mask>	subnet mask in decimal format
	<prefix-length>	mask is indicated by prefix. For example, mask 255.255.255.0 in prefix is “24”, and mask 255.255.255.252 in prefix is “30”.

Default	None
Mode	DHCP Address Pool Mode
Usage	If no mask or prefix is configured when configuring the IP address, and no information in the IP address pool indicates anything about the mask, the system will assign a mask automatically according to the IP address class. This command is used with “hardware address” command or “client identifier” command when binding addresses manually. If the identifier or hardware address of the requesting client matches the specified identifier or hardware address, the DHCP server assigns the IP address defined in “host” command to the client.
Example	Specifying IP address 10.1.128.160 to be bound to user with hardware address 00-10-5a-60-af-12 in manual address binding. Switch#config Switch(config)#ip dhcp pool 1 Switch(dhcp-1-config)#hardware-address 00-10-5a-60-af-12 Switch(dhcp-1-config)#host 10.1.128.160 24

ip dhcp conflict logging

Syntax	**ip dhcp conflict logging** **no ip dhcp conflict logging**
Parameter	none
Default	Logging for address conflict is enabled by default.
Mode	Global Mode
Usage	When logging is enabled, once the address conflict is detected by the DHCP server, the conflicting address will be logged. Addresses present in the log for conflicts will not be assigned dynamically by the DHCP server until the conflicting records are deleted.
Example	Disable logging for DHCP server. Switch#config Switch(config)#no ip dhcp conflict logging

ip dhcp disable

Syntax	**ip dhcp disable** **no ip dhcp disable**
Parameter	none
Default	Enable
Mode	Port mode
Usage	After the port disables DHCP services, directly drop all DHCP packets sent by the port.

Example	The port disables DHCP services. Switch#config Switch(config)#interface ethernet 1/0/1 Switch(config-if-ethernet1/0/1)#ip dhcp disable

ip dhcp excluded-address

Syntax	**ip dhcp excluded-address *<low-address>* [*<high-address>*]** **no ip dhcp excluded-address *<low-address>* [*<high-address>*]**	
Parameter	***<low-address>***	starting IP address
	<high-address>	ending IP address
Default	Only individual address is excluded by default	
Mode	Global Mode	
Usage	This command can be used to exclude one or several consecutive addresses in the pool from being assigned dynamically so that those addresses can be used by the administrator for other purposes.	
Example	Reserving addresses 1.1.1.1 from dynamic assignment. Switch#config Switch(config)#ip dhcp excluded-address 1.1.1.1	

ip dhcp pool

Syntax	**ip dhcp pool <name>** **no ip dhcp pool <name>**	
Parameter	**<name>**	address pool name, up to 32 characters are allowed
Default	None	
Mode	Global Mode	
Usage	This command is used to configure a DHCP address pool under Global	
Example	Defining an address pool named “1”. Switch#config Switch(config)#ip dhcp pool 1 Switch(dhcp-1-config)#	

ip dhcp conflict ping-detection enable

Syntax	**ip dhcp conflict ping-detection enable** **no ip dhcp conflict ping-detection enable**
Parameter	None

Default	By default, Ping-detection of conflict is disabled.
Mode	Global Mode
Usage	To enable Ping-detection of conflict, one should enable the log of conflict addresses, when which is disabled, so will the ping-detection of conflict. When a client is unable to receive Ping request messages (when blocked by firewall, for example), this function will check local ARP according to allocated IP: if a designated IP has a corresponding ARP, then an address conflict exists; otherwise, allocate it to the client.
Example	Enable Ping-detection of conflict. Switch#config Switch(config)#ip dhcp conflict ping-detection enable

ip dhcp ping packets

Syntax	**ip dhcp ping packets <request-num>** **no ip dhcp ping packets**	
Parameter	<request num>	number of Ping request message to be sent in Ping-detection of conflict.
Default	No more than 2 Ping request messages will be sent by default.	
Mode	Global Mode	
Usage	Set the max number of Ping request (Echo Request) message to be sent in Ping-detection of conflict on DHCP server, whose default value is 2; the no operation of this command will restore the default value.	
Example	Set the max number of Ping request (Echo Request) message to be sent in Ping-detection of conflict on DHCP server as 3. Switch#config Switch(config)#ip dhcp ping packets 3	

ip dhcp ping timeout

Syntax	**ip dhcp ping timeout <timeout-value>** **no ip dhcp ping timeout**	
Parameter	**<timeout-value>**	***<timeout-value>*** is the timeout period of waiting for a reply message after each Ping request message in Ping-detection of conflict.
Default	The timeout period is 500ms by default.	
Mode	Global Mode	
Usage	Set the timeout period (in ms) of waiting for a reply message (Echo Request) after each Ping	

	request message (Echo Request) in Ping-detection of conflict on DHCP server, whose default value is 500ms. The no operation of this command will restore the default value.
Example	Set the timeout period (in ms) of waiting for each reply message (Echo Request) in Ping-detection of conflict on DHCP server as 600ms. Switch#config Switch(config)#ip dhcp ping timeout 600

lease

Syntax	**lease (*<days>* [*<hours>*][*<minutes>*] | infinite)** **no lease**	
Parameter	***<days>***	number of days from 0 to 365;
	<hours>	number of hours from 0 to 23
	<minutes>	number of minutes from 0 to 59
	infinite	perpetual use
Default	The default lease duration is 1 day.	
Mode	DHCP Address Pool Mode	
Usage	DHCP is the protocol to assign network addresses dynamically instead of permanently, hence the introduction of ease duration. Lease settings should be decided based on network conditions: too long lease duration offsets the flexibility of DHCP, while too short duration results in increased network traffic and overhead. The default lease duration of switch is 1 day.	
Example	Setting the lease of DHCP pool “sd” to 3 days 12 hours and 30 minutes. Switch#config Switch(config)#ip dhcp pool sd Switch(dhcp-sd-config)#lease 3 12 30	

max-lease-time

Syntax	**max-lease-time (*<days>* [*<hours>*][*<minutes>*] | infinite)** **no max-lease-time**	
Parameter	***<days>***	number of days from 0 to 365;
	<hours>	number of hours from 0 to 23
	<minutes>	number of minutes from 0 to 59
	infinite	perpetual use
Default	The default lease time is 1 day.	
Mode	DHCP Address Pool Mode	
Usage	This command is used to DHCP request packets with option51. If the lease time (user requests the address) exceeds the maximum lease time configured, the lease that DHCP server assigns the address is the maximum lease time configured. If the lease time requested by the user is less than the maximum lease time configured, the lease that DHCP server assigns the address is the lease time requested by the user. The maximum lease time is able to be set by the administrator according to the actual network condition, and the maximum	

	lease time is 1 day by default.
Example	Set the maximum lease time of DHCP address pool1 to 3 days 12 hours and 30 minutes. Switch#config Switch(config)#ip dhcp pool 1 Switch(dhcp-1-config)#max-lease-time 3 12 30

netbios-name-server

Syntax	**netbios-name-server <address1> [address2[...<address8>]]** **no netbios-name-server**	
Parameter	**<address1>...<address 8>**	IP addresses, in decimal format.
Default	No WINS server is configured by default.	
Mode	DHCP Address Pool Mode	
Usage	This command is used to specify WINS server for the client, up to 8 WINS server addresses can be configured. The WINS server address assigned first has the highest priority. Therefore, address 1 has the highest priority, and address 2 the second, and so on.	
Example	Setting the server address of DHCP pool "1" to 192.168.1.1. Switch#config Switch(config)#ip dhcp pool 1 Switch(dhcp-1-config)#netbios-name-server 192.168.1.1	

netbios-node-type

Syntax	**netbios-node-type {b-node | h-node | m-node | p-node | <type-number>}** **no netbios-node-type**	
Parameter	**b-node**	broadcasting node
	h-node	hybrid node that broadcasts after point-to-point communication
	m-node	hybrid node to communicate in point-to-point after broadcast;
	p-node	point-to-point node
	<type-number>	node type in Hex from 0 to FF
Default	No client node type is specified by default.	
Mode	DHCP Address Pool Mode	
Usage	If client node type is to be specified, it is recommended to set the client node type to h-node that broadcasts after point-to-point communication.	
Example	Setting the node type for client of pool 1 to broadcasting node. Switch#config Switch(config)#ip dhcp pool 1 Switch(dhcp-1-config)#netbios-node-type-node	

network-address

Syntax	**network-address <network-number> [<mask> | <prefix-length>]** **no network-address**	
Parameter	**<network-number>**	network number;
	<mask>	subnet mask in the decimal format
	<prefix-length>	mask in prefix form. For example, mask 255.255.255.0 in prefix is "24", and mask 255.255.255.252 in prefix is "30". Note: When using DHCP server, the pool mask should be longer or equal to that of layer 3 interface IP address in the corresponding segment.
Default	If no mask is specified, default mask will be assigned according to the address class.	
Mode	DHCP Address Pool Mode	
Usage	This command sets the scope of addresses that can be used for dynamic assignment by the DHCP server; one address pool can only have one corresponding segment. This command is exclusive with the manual address binding command "hardware address" and "host".	
Example	Configuring the assignable address in pool 1 to be 10.1.128.0/24. Switch#config Switch(config)#ip dhcp pool 1 Switch(dhcp-1-config)#network-address 10.1.128.0 24	

next-server

Syntax	**next-server <address1>[<address2>[…<address8>]]** **no next-server**	
Parameter	**<address1>...<address8>**	IP addresses, in the decimal format
Default	None	
Mode	DHCP Address Pool Mode	
Usage	This command configures the address for the server hosting client import file. This is usually used for diskless workstations that need to download configuration files from the server on boot up. This command is used together with "bootfile".	
Example	Setting the hosting server address as 10.1.128.4. Switch#config Switch(config)#ip dhcp pool 1 Switch(dhcp-1-config)#next-server 10.1.128.4	

option

Syntax	**option <*code*> {ascii <*string*> | hex <*hex*> | ipaddress <*ipaddress*>}** **no option <code>**	
Parameter	**<code>**	code for network parameters
	<string>	ASCII string up to 255 characters
	<hex>	a value in Hex that is no greater than 510 and must be of even length
	<ipaddress>	IP address in decimal format, up to 63 IP addresses can be

	configured.
Default	none
Mode	DHCP Address Pool Mode
Usage	The switch provides common commands for network parameter configuration as well as various commands useful in network configuration to meet different user needs. The definition of option code is described in detail in RFC2123.
Example	Setting the WWW server address as 10.1.128.240. Switch#config Switch(config)# ip dhcp pool 1 Switch(dhcp-1-config)#option 72 ip 10.1.128.240

service dhcp

Syntax	**service dhcp** **no service dhcp**
Parameter	None
Default	DHCP service is disabled by default.
Mode	Global Mode
Usage	Both DHCP server and DHCP relay are included in the DHCP service. When DHCP services are enabled, both DHCP server and DHCP relay are enabled. Switch can only assign IP address for the DHCP clients and enable DHCP relay when DHCP server function is enabled.
Example	Enabling DHCP server. Switch#config Switch(config)#service dhcp

show ip dhcp binding

Syntax	**show ip dhcp binding [[<ip-addr>] [type {all | manual | dynamic}] [count]]**	
Parameter	**<ip-addr>**	a specified IP address in decimal format
	all	all binding types (manual binding and dynamic assignment)
	manual	manual binding
	dynamic	dynamic assignment
	count	displays statistics for DHCP address binding entries.
Default	None	
Mode	Admin and Configuration Mode	
Usage	Displays IP-MAC binding information.	

Example	Switch# show ip dhcp binding IP address Hardware address Lease expiration Type 10.1.1.233 00-00-E2-3A-26-04 Infinite Manual 10.1.1.254 00-00-E2-3A-5C-D3 60 Automatic

Displayed information	Explanation
IP address	IP address IP address assigned to a DHCP client
Hardware address	MAC address of a DHCP client
Lease expiration	Valid time for the DHCP client to hold the IP address
Type	Type of assignment: manual binding or dynamic assignment

show ip dhcp conflict

Syntax	**show ip dhcp conflict**
Parameter	none
Default	none
Mode	Admin and Configuration Mode
Usage	Displays log information for addresses that have a conflict record.
Example	Switch# show ip dhcp conflict IP Address Detection method Detection Time 10.1.1.1 Ping FRI JAN 02 00:07:01 2002

Displayed information	Explanation
IP Address	Conflicting IP address
Detection method	Method in which the conflict is detected
Detection Time	Time when the conflict is detected.

show ip dhcp relay information option

Syntax	**show ip dhcp relay information option**
Parameter	**none**
Default	none
Mode	Admin and Configuration Mode
Usage	Show the relative configuration for DHCP relay option82
Example	Switch#show ip dhcp relay information option ip dhcp server relay information option(i.e. option 82) is enabled ip dhcp relay information option(i.e. option 82) is enabled

show ip dhcp server statistics

Syntax	**show ip dhcp server statistics**
Parameter	**none**
Default	none
Mode	Admin and Configuration Mode
Usage	Displays statistics of all DHCP packets for a DHCP server
Example	Switch# show ip dhcp server statistics Address pools 1 Database agents 0 Automatic bindings 0 Manual bindings 0 Conflict bindings 0 Expiried bindings 0 Malformed message 0 Message Received BOOTREQUEST 0 DHCPDISCOVER 0 DHCPREQUEST 0 DHCPDECLINE 0 DHCPRELEASE 0 DHCPINFORM 0 Message Send BOOTREPLY 0 DHCPOFFER 0 DHCPACK 0 DHCPNAK 0 DHCPRELAY 0 DHCPFORWARD 0 Switch#

Displayed information	Explanation
Address pools	Number of DHCP address pools configured.
Database agents	Number of database agents.
Automatic bindings	Number of addresses assigned automatically
Manual bindings	Number of addresses bound manually
Conflict bindings	Number of conflicting addresses
Expired bindings	Number of addresses whose leases are expired
Malformed message	Number of error messages.
Message Received	Statistics for DHCP packets received
BOOTREQUEST	Total packets received
DHCPDISCOVER	Number of DHCPDISCOVER packets
DHCPREQUEST	Number of DHCPREQUEST packets
DHCPDECLINE	Number of DHCPDECLINE packets
DHCPRELEASE	Number of DHCPRELEASE packets
DHCPINFORM	Number of DHCPINFORM packets
Message Send	Statistics for DHCP packets sent

	BOOTREPLY	Total packets sent
	DHCPOFFER	Number of DHCPOFFER packets
	DHCPACK	Number of DHCPACK packets
	DHCPNAK	Number of DHCPNAK packets
	DHCPRELAY	Number of DHCPRELAY packets
	DHCPFORWARD	Number of DHCPFORWARD packets

ip dhcp broadcast suppress

Syntax	**ip dhcp broadcast suppress** **no ip dhcp broadcast suppress**
Parameter	**none**
Default	Disable
Mode	Global Mode
Usage	Enable DHCP broadcast suppress function, the no command disables the function Suppress the forwarding about DHCP broadcast packets, namely, drop or copy DHCP broadcast packets to CPU.
Example	Enable DHCP broadcast suppress function. Switch# config Switch(config)#ip dhcp broadcast suppress

ip dhcp relay share-vlan <vlanid> sub-vlan <vlanlist>

Syntax	**ip dhcp relay share-vlan <vlanid> sub-vlan <vlanlist>** **no ip dhcp relay share-vlan**	
Parameter	**<vlanid>**	VLAN ID of share-vlan
	<vlanlist>	sub-vlan list
Default	None	
Mode	Global Mode	
Usage	Specify sub-vlan of a share-vlan, the no command cancels sub-vlan. share-vlan may include many sub-vlan, but a sub-vlan only corresponds to a share-vlan. When layer 2 device of DHCP Relay receive DHCP Request, firstly judge whether VLAN with layer 3 interface for receiving package. If there is layer 3 interface in package, use the interface to process DHCP Relay, or else use layer 3 interface of share-vlan to process DHCP Relay when the vlan is sub-vlan of share-vlan.	
Example	Switch#config Switch(config)#ip dhcp relay share-vlan 2 sub-vlan 2-4	

ip forward-protocol udp bootps

Syntax	**ip forward-protocol udp bootps**

	no ip forward-protocol udp bootps
Parameter	none
Default	Not forward UPD broadcast packets by default.
Mode	Global Mode
Usage	Sets DHCP relay to forward UPD broadcast packets on the port; the "**no ip forward-protocol udp bootps**"command cancels the service. The forwarding destination address is set in the "**ip helper-address**" command and described later
Example	Setting DHCP packets to be forwarded to 192.168.1.5. Switch#config Switch(config)#ip forward-protocol udp boots Switch(config)#interface vlan 1 Switch(config-if-vlan1)#ip helper-address 192.168.1.5

ip helper-address

Syntax	**ip helper-address <ip-address>** **no ip helper-address <ip-address>**	
Parameter	**ip-address**	IP addresses, in the decimal format
Default	none	
Mode	Port mode	
Usage	Specifies the destination address for the DHCP relay to forward UDP packets. The "**no ip helper-address <*ip-address*>**" command cancels the setting. The DHCP relay forwarding server address corresponds to the port forwarding UDP, i.e. DHCP relay forwards corresponding UDP packets only to the corresponding server instead of all UDP packets to all servers. When this command is run after "ip forward-protocol udp <port>" command, the forwarding address configured by this command receives the UDP packets from <port>. The combination of "ip forward-protocol udp <port>" command and this command should be used for configuration.	
Example	Switch#config Switch(config)#ip forward-protocol udp bootps Switch(config)#interface vlan 1 Switch(config-if-vlan1)#ip helper-address 192.168.2.5	

show ip forward-protocol

Syntax	**show ip forward-protocol**
Parameter	**none**
Default	none
Mode	Admin and Configuration Mode
Usage	Show the configured port ID of the protocol which support the forwarding of broadcast packets, it means the port ID for forwarding DHCP packets.
Example	Switch#show ip forward-protocol Forward protocol(UDP port): 67(active)

show ip helper-address

Syntax	**show ip helper-address**
Parameter	none
Default	none
Mode	Admin and Configuration Mode
Usage	Show the configuration relation for the port ID of the protocol (It can forward broadcast packets), the interface (It supports forwarding function) and the forwarded destination IP.
Example	Switch#show ip helper-address Forward protocol Interface Forward server 67(active) Vlan1 192.168.2.5

clear ipv6 dhcp binding

Syntax	**clear ipv6 dhcp binding [<ipv6-address>] [pd <ipv6-prefix | prefix-length>]**	
Parameter	<ipv6-address>	specified IPv6 address with binding record
	<ipv6-prefix | prefix-length>	specified IPv6 prefix with binding record; To clear all IPv6 address binding record if there is no specified record.
Default	none	
Mode	Admin Configuration Mode	
Usage	To clear one specified DHCPv6 assigned address binding record or all the IPv6 address binding records. DHCPv6 IPv6 address binding information can be displayed through the command **show ipv6 dhcp binding**. If DHCPv6 client does not use the DHCPv6 allocated IPv6 address but when the life time of the IPv6 address does not end, the DHCPv6 server will not remove its bind for this address. In this situation, the address binding information can be removed manually through this command; and if no parameter is appended, this command will remove all the address binding information, then all addresses and prefix will be assigned again in the DHCPv6 address pool.	
Example	To delete all binding record of IPv6 address and prefix Switch#clear ipv6 dhcp binding	

clear ipv6 dhcp conflict

Syntax	**clear ipv6 dhcp conflict [address]**	
Parameter	address	specified address with the conflict record, no specified address will clear all conflict records.
Default	none	
Mode	Admin Mode	
Usage	Clear the address with the conflict record in address conflict log. With **show ipv6 dhcp conflict** command, the user can check the conflict in which IP addresses. With this command, the user can clears the conflict record of an address. If no	

	specified address will clear the conflict record of all addresses in log. After the conflict records are cleared in log, these addresses can be used by DHCPv6 server again.
Example	When administrator checks the conflict logs, administrator discovers that address 2001::1 with the conflict record is not used, so its record will be cleared from address conflict files. Switch#clear ipv6 dhcp conflict 2001::1

clear ipv6 dhcp statistics

Syntax	**clear ipv6 dhcp statistics**
Parameter	none
Default	none
Mode	Admin Mode
Usage	Clear the statistic records of DHCPv6 packets, the statistic counter of DHCPv6 packets is cleared. With **show ipv6 dhcp statistics** command, the user can check the statistic information of the counter for DHCPv6 packets, all statistic information is an accumulative value. With this command will clear the counter to check the debugging conveniently.
Example	Clear the counter of DHCPv6 packets. Switch#clear ipv6 dhcp statistics

dns-server

Syntax	**dns-server <ipv6-address>** **no dns-server <ipv6-address>**
Parameter	**<ipv6-address>** IPv6 address of DNS Server
Default	none
Mode	DHCPv6 Address Pool Configuration Mode.
Usage	To configure the IPv6 address of the DNS server for DHCPv6 client; the no form of this command will remove the DNS configuration. For each address pool, at most three DNS server can be configured, and the addresses of the DNS server must be valid IPv6 addresses.
Example	To configure the DNS Server address of DHCPv6 client as 2001:da8::1. Switch(dhcp-1-config)#dns-server 2001:da8::1

domain-name

Syntax	**domain-name <domain-name>** **no domain-name <domain-name>**
Parameter	**<domain-name>** domain name, less than 32 characters
Default	The domain name parameter of address pool is not configured by default
Mode	DHCPv6 Address Pool Configuration Mode.
Usage	To configure domain name of DHCPv6 client; the no form of this command will delete the domain name.

	At most 3 domain names can be configured for each address pool.
Example	To set the domain name of DHCPv6 client as test.com.cn Switch(dhcp-1-config)#domain-name test.com.cn

excluded-address

Syntax	**excluded-address <ipv6-address>** **no excluded-address <ipv6-address>**	
Parameter	**<ipv6-address>**	IPv6 address to be excluded from being allocated to hosts in the address pool
Default	Disabled	
Mode	DHCPv6 Address Pool Configuration Mode.	
Usage	To configure the specified IPv6 address to be excluded from the address pool, the excluded address will not be allocated to any hosts; the no form of this command will remove the configuration. This command is used to preserve the specified address from DHCPv6 address allocation.	
Example	To configure to exclude 2001:da8:123::1 from DHCPv6 address allocation. Switch(config)#excluded-address 2001:da8:123::1	

ipv6 address

Syntax	**ipv6 address <prefix-name> <ipv6-prefix/prefix-length>** **no ipv6 address <prefix-name> <ipv6-prefix/prefix-length>**	
Parameter	**<prefix-name>**	a string with its length no more than 32, designating or manual configuring the name of the address prefix defined in the prefix pool
	<ipv6-prefix/prefix-length>	latter part of the IPv6 address excluding the address prefix, as well as its length.
Default	No global address is configured for interfaces by default.	
Mode	Port mode	
Usage	To configure the specified interface to use prefix delegation for address allocation. The no form of this command will disable the using of prefix delegation for address allocation. The IPv6 address of an interface falls into two parts: ***<prefix-name>*** and ***<ipv6-prefix>/<prefix-length>***. If routing advertisement has been enabled, the first 64 bits of the addresses will be advertised. The address generated by ***<prefix-name>*** and ***<ipv6-prefix/prefix-length>*** combination will be removed, and the advertising of the prefix will be disabled. Only one ***<ipv6-prefix/prefix-length>*** can be configured for one prefix name.	
Example	If the prefix name my-prefix designates 2001:da8:221::/48, then the following command will add the address 2001:da8:221:2008::2008 to interface VLAN1. Switch(Config-if-Vlan1)# ipv6 address my-prefix 0:0:0:2008::2008/64	

ipv6 dhcp client pd

Syntax	**ipv6 dhcp client pd <prefix-name> [rapid-commit]** **no ipv6 dhcp client pd**	
Parameter	**<prefix-name>**	<prefix-name> is the string with its length no more than 32, which designates the name of the address prefix.
	rapid-commit	If **rapid-commit** optional is specified and the prefix delegation server enables the rapid-commit function, then the prefix delegation server will reply the prefix delegation client with the REPLY message directly. And the prefix delegation request will be accomplished by exchanging messages once.
Default	DHCPv6 prefix delegation client is not enabled by default.	
Mode	Port mode	
Usage	To configure DHCPv6 prefix delegation client for the specified interface. The no form of this command will disable the DHCPv6 prefix delegation client and remove the allocated address prefix. This command is used to configure the prefix delegation client on the specified interface, an interface with prefix delegation client enabled will send SOLICIT packets to try to get address prefix from the server. If the prefix is retrieved correctly, the address prefix in the global address pool can be used by the **ipv6 address** command to generate a valid IPv6 address. This command is exclusive with **ipv6 dhcp server** and **ipv6 dhcp relay destination**. If the prefix delegation client is disabled for an interface, then the address prefix which is get from this interface through prefix delegation client, will be removed from the global address pool. Also the interface address which is generated by the prefix delegation client will be removed, and routing advertisement with the prefix will be disabled. If any general prefix has been configured by the **ipv6 general-prefix** command, the same prefix learnt from prefix delegation will be disagreed.	
Example	Switch(Config-if-Vlan1)#ipv6 dhcp client pd ClientA rapid-commit	

ipv6 dhcp client pd hint

Syntax	**ipv6 dhcp client pd hint <prefix|prefix-length>** **no ipv6 dhcp client pd hint <prefix|prefix-length>**	
Parameter	**<prefix|prefix-length>**	prefix demanded by the client and its length.
Default	There is no such configuration in the system by default.	
Mode	Port mode	
Usage	Designate the prefix demanded by the client and its length. The no operation of this command will delete that prefix and its length from the specified interface. The system designates a prefix and its length on the interface for a client. If client prefix-proxy demanding function is enabled on the interface and hint function is enabled on the switch, the user will have prior claim to the prefix it demands and the prefix length when the server allocates them. Only one hint prefix is allowed in the system.	
Example	Switch(vlan-1-config)#ipv6 dhcp client pd hint 2001::/48	

ipv6 dhcp pool

Syntax	**ipv6 dhcp pool <poolname>** **no ipv6 dhcp pool <poolname>**	
Parameter	**<poolname>**	address pool name of DHCPv6 with its length no more than 32.
Default	Any DHCPv6 address pool are not configured by default.	
Mode	Global Mode	
Usage	To configure the address pool for DHCPv6, and enter the DHCPv6 address pool configuration mode. In this mode, information such as the address prefix to be allocated, the DNS server addresses, and domain names, can be configured for the DHCPv6 client. The no form of this command will remove the configuration of the address pool. This command should be launched in global configuration mode, and falls in DHCPv6 address pool configuration mode if launched successfully. To remove a configured address pool, interface bindings related to the address pool, as well as the related address bindings will be removed.	
Example	To define an address pool, named 1. Switch#config Switch(config)#ipv6 dhcp pool 1	

ipv6 dhcp relay destination

Syntax	**ipv6 dhcp relay destination {[*<ipv6-address>*] [interface { *<interface-name>* | vlan *<1-4096>* }] }** **no ipv6 dhcp relay destination { [*<ipv6-address>*] [interface { *<interface-name>* | vlan *<1-4096>* }] }**	
Parameter	***<ipv6-address>***	address of the destination to which the DHCPv6 relay forwards;
	<interface-name>	interface name which is used for forwarding of DHCPv6 requests
	<1-4096>	VLAN ID
	If ***<ipv6-addess>*** is a global unicast address, the **interface** parameter should not be configured; If ***<ipv6-address>*** is an local address, the **interface** parameter is required be configured; The destination address for the DHCPv6 server will be the multicast address of **ALL_DHCP_Servers (FF05::1:3)**, if the interface parameter is configured only.	
Default	By default, destination address for DHCPv6 relay is not configured.	
Mode	Port mode	
Usage	To configure the destination to which the DHCPv6 relay forwards the DHCPv6 requests from the clients, the destination should be the address of an external DHCPv6 relay or the DHCPv6 server. The no form of this command will remove the configuration. This command is used to configure the DHCPv6 relay for the specified interface, the address should be the address of another DHCPv6 relay or the address DHCPv6 server. At most three relay addresses can be configured for an interface. To be mentioned, the DHCPv6 relay stops working only if all the relay destination address configurations have been removed. This command is mutually exclusive to “ipv6 dhcp server” and “ipv6 dhcp client pd” commands.	
Example	Switch#config Switch(config)#interface vlan 1 Switch(config-if-vlan1)#ipv6 dhcp relay destination 2001:da8::1	

ipv6 dhcp server

Syntax	**ipv6 dhcp server <poolname> [preference <value>] [rapid-commit] [allow-hint]** **no ipv6 dhcp server <poolname>**	
Parameter	**<poolname>**	Name of the created DHCPv6 address pool
	<value>	The priority of the DHCPv6 server, the larger the value, the higher the priority, the range: 0-255, the default is 0.
	rapid-commit	The DHCPv6 server sends the REPLY packet to the client immediately after receiving the SOLICIT packet
	allow-hint	Append the client's expected parameter value to its request packet
Default	DHCPv6 address pool based on port is not configured by default.	
Mode	Port mode	
Usage	This command configures the address pool which will be allocated by the DHCPv6 server through the specified interface. The no form of this command will remove the address pool configuration. This command configure the DHCPv6 address pool which is applied by the DHCPv6 server for the specified interface, as well as optional parameters. One VLAN can bind many DHCPv6 address pools and assign the address for DHCPv6 request packet from direct-link and relay delegation.	
Example	Switch#config Switch(config)#interface vlan 1 Switch(config-if-vlan1)#ipv6 dhcp server PoolA preference 80 rapid-commit allow-hint	

ipv6 general-prefix

Syntax	**ipv6 general-prefix <prefix-name> <ipv6-prefix/prefix-length>** **no ipv6 general-prefix <prefix-name>**	
Parameter	**<prefix-name>**	***<prefix-name>*** is a character string less than 32 characters, to use as IPv6 general prefix name.
	<ipv6-prefix/prefix-length>	***<ipv6-prefix/prefix-length>*** is defined as IPv6 general prefix.
Default	IPv6 general prefix is not configured by default.	
Mode	Global Mode	
Usage	To define an IPv6 general prefix. The no form of this command will delete the configuration. If IPv6 general prefix is configured, the interface will use the configured prefix for IPv6 address generating. Commonly, the general prefix is used for enterprise IPv6 prefix, and when entering an IPv6 address, users can simply add the address suffix of to the name of the general prefix. The configured address prefix will be reserved in the general address prefix pool. At most 8 general prefix can be configured at the same time. When trying to remove a configured general prefix name, the operation will fail if any interfaces used the configured prefix. Only one general prefix for a prefix name. The general prefix cannot use the same prefix definition with prefixes learnt from prefix delegation.	
Example	To set the prefix of 2001:da8:221::/48 to general prefix my-prefix. Switch#config Switch(config)# ipv6 general-prefix my-prefix 2001:da8:221::/48	

ipv6 local pool

Syntax	**ipv6 local pool <poolname> <prefix/prefix-length> <assigned-length>** **no ipv6 local pool <poolname>**	
Parameter	**<poolname>**	***<poolname>*** is the name for the IPv6 address pool of the prefix delegation, the length name string should be less than 32.
	<prefix/prefix-length>	***<prefix/prefix-length>*** is the address prefix and its length of the prefix delegation.
	<assigned-length>	***<assigned-length>*** is the length of the prefix in the address pool which can be retrieved by the client, the assigned prefix length should be no less than the value of ***<prefix-length>***
Default	No IPv6 prefix delegation address pool is configured by default.	
Mode	Global Mode	
Usage	To configure the address pool for prefix delegation. The no form of this command will remove the IPv6 prefix delegation configuration. This command should be used with the "**prefix delegation pool**" command to allocate address prefixes to the clients. If IPv6 prefix delegation is removed, the associated "**prefix delegation**" command will be in-effective either.	
Example	Switch#config Switch(config)#ipv6 local pool 1 1100::1/24 24	

lifetime

Syntax	**lifetime {<valid-time> | infinity} {<preferred-time> | infinity}** **no lifetime**	
Parameter	**<valid-time>**	**The valid lifetime of the IPv6 address allocated in the local address pool, 1-31536000 seconds, must be greater than <preferred-time>**
	<preferred-time>	The preferred lifetime of the IPv6 address allocated in the local address pool, 1-31536000 seconds, must be less than <valid-time>
	infinity	Longest service life
Default	The default valid life time and preferred life time are 2592000 seconds (30 days) and 604800 seconds (7 days) respectively	
Mode	DHCPv6 Address Pool Configuration Mode.	
Usage	To configure the life time for the addresses or the address prefixes allocated by DHCPv6. The no form of this command will restore the default setting.	
Example	To configure the valid life time as 1000 seconds, and the preferred life time as 600 seconds. Switch#config Switch(config)#lifetime 1000 600	

network-address

Syntax	**network-address <ipv6-pool-start-address> <ipv6-pool-end-address> | <prefix-length> [eui-64])** **no network-address**	
Parameter	**<ipv6-pool-start-addre**	start of the address pool;

	ss>	
	<ipv6-pool-end-address>	end of the address pool
	<prefix-length>	The length of the address prefix, ranging from 3 to 128, the default is 64
	eui-64	According to the eui-64 standard, IPv6 addresses are allocated, not designated as being allocated in order
Default	No address pool is configured by default.。	
Mode	DHCPv6 Address Pool Configuration Mode.	
Usage	To configure the DHCPv6 address pool; the no form of this command will remove the address pool configuration. This command configures the address pool for the DHCPv6 server to allocate addresses, only one address range can be configured for each address pool. To be noticed, if the DHCPv6 server has been enabled, and the length of the IPv6 address prefix has been configured, the length of the prefix in the address pool should be no less than the length of the prefix of the IPv6 address of the respective layer three interfaces in the switch. If ***<ipv6-pool-end-address>*** is bigger than ***<ipv6-pool-start-address>***, this command returns at once.	
Example	To configure the address range for address pool as 2001:da8:123::100-2001:da8:123::200. Switch#config Switch(config)#ipv6 dhcp pool 1 Switch(dhcp-1-config)#network-address 2001:da8:123::100 2001:da8:123::200	

prefix-delegation

Syntax	**prefix-delegation <ipv6-prefix/prefix-length> <client-DUID> [iaid <iaid>] [lifetime <valid-time> <preferred-time>]** **no prefix-delegation <ipv6-prefix/prefix-length> <client-DUID> [iaid <iaid>]**	
Parameter	**<ipv6-prefix/prefix-length>**	***<ipv6-prefix/prefix-length>*** is the length of the prefix to be allocated to the client.
	<client-DUID>	<client-DUID> is the DUID of the client. DUID with the type of DUID-LLT and DUID-LL are supported, the DUID of DUID-LLT type should be of 14 characters.
	<iaid>	***<iaid>*** is the value to be appended in the IA_PD field of the clients' requests.
	<valid-time>	The valid life cycle (in seconds) of the IPv6 address assigned to the client, the range is 1-31536000, the default is 2592000, and it must be greater than the preferred-time
	<preferred-time>	The preferred lifetime of the IPv6 address assigned to the client (in seconds), the range is 1-31536000, the default is 604800, and it must be less than valid-time
Default	Disabled	
Mode	Port mode	
Usage	To configure dedicated prefix delegation for the specified user. The no form of this command will remove the dedicated prefix delegation. This command configures the specified IPv6 address prefix to bind with the specified client. If no IAID is configured, any IA of any clients will be able get this address prefix. At most eight static binding address prefix can be configured for each address pool. For prefix	

	delegation, static binding is of higher priority than the prefix address pool.
Example	The following command will allocate 2001:da8::/48 to the client with DUID as 000100060000000005000BBFAA2408, and IAID as 12. Switch#config Switch(config)#ipv6 dhcp pool 1 Switch(dhcp-1-config)#prefix-delegation 2001:da8::/48 000100060000000005000BBFAA240812

prefix-delegation pool

Syntax	**prefix-delegation pool <poolname> [lifetime <valid-time> <preferred-time>]** **no prefix-delegation pool <poolname>**	
Parameter	**<poolname>**	***<poolname>*** is the name of the address prefix pool, the length name string should be less than 32.
	<valid-time>	The valid life cycle (in seconds) of the IPv6 address assigned to the client, the range is 1-31536000, the default is 2592000, and it must be greater than the preferred-time
	<preferred-time>	The preferred lifetime of the IPv6 address assigned to the client (in seconds), the range is 1-31536000, the default is 604800, and it must be less than valid-time
Default	The prefix delegation name used by DHCPv6 address pool is not configured.	
Mode	DHCPv6 Address Pool Configuration Mode.	
Usage	To configure prefix delegation name used by DHCPv6 address pool. The no form of this command deletes the configuration. This command configures the name of the address prefix pool for address allocation. If configured, the addresses in the prefix address pool will be allocated to the clients. This command can be used in association with the **ipv6 local pool** command. For one address pool, only one prefix delegation pool can be bound. When trying to remove the prefix name configuration, the prefix delegation service of the server will be unavailable, if both the address pool is not associated with the prefix delegation pool and no static prefix delegation binding is enabled.	
Example	Switch#show subnet-vlan Switch(config)#ipv6 dhcp pool 1 Switch(dhcp-1-config)#prefix-delegation pool abc	

service dhcpv6

Syntax	**service dhcpv6** **no service dhcpv6**
Parameter	none
Default	Disabled
Mode	Global Mode
Usage	To enable DHCPv6 server function; the no form of this command disables the configuration. The DHCPv6 services include DHCPv6 server function, DHCPv6 relay function, DHCPv6 prefix delegation function. All of the above services are configured on ports. Only when

	DHCPv6 server function is enabled, the IP address assignment of DHCPv6 client, DHCPv6 relay and DHCPv6 prefix delegation functions enabled can be configured on ports.
Example	To enable DHCPv6 server. Switch#config Switch(config)# service dhcpv6

show ipv6 dhcp

Syntax	**show ipv6 dhcp**
Parameter	**none**
Default	none
Mode	Admin and Configuration Mode
Usage	To show the enable switch and DUID of DHCPv6 service To show the enable switch and DUID of DHCPv6 service, server identifier options only use DUID of DUID-LLT type.
Example	Switch#show ipv6 dhcp DHCPv6 is enabled LLT DUID is <00:01:00:01:43:b7:1b:81:00:03:0f:01:5f:9d> LL DUID is <00:03:00:01:00:03:0f:01:5f:9d>

show ipv6 dhcp binding

Syntax	**show ipv6 dhcp binding [<ipv6-address>| pd <ipv6-prefix|prefix-length>|count]**	
Parameter	**ipv6-address**	specified IPv6 address;
	count	show the number of DHCPv6 address bindings
Default	none	
Mode	Admin and Configuration Mode	
Usage	To show all the address and prefix binding information of DHCPv6, include type, DUID, IAID, prefix, valid time and so on.	
Example	Switch#show ipv6 dhcp binding Client: iatype IANA, iaid 0x0e001d92 DUID: 00:01:00:01:0f:55:82:4f:00:19:e0:3f:d1:83 IANA leased address: 2001:da8::10 Preferred lifetime 604800 seconds, valid lifetime 2592000 seconds Lease obtained at %Jan 01 01:34:44 1970 Lease expires at %Jan 31 01:34:44 1970 (2592000 seconds left) The number of DHCPv6 bindings is 1	

show ipv6 dhcp conflict

Syntax	**show ipv6 dhcp conflict**
Parameter	**none**

Default	none
Mode	Admin and Configuration Mode
Usage	Show the log for the address that have a conflict record.
Example	Switch#show ipv6 dhcp DHCPv6 is enabled LLT DUID is <00:01:00:01:43:b7:1b:81:00:03:0f:01:5f:9d> LL DUID is <00:03:00:01:00:03:0f:01:5f:9d>

show ipv6 dhcp interface

Syntax	**show ipv6 dhcp interface [<interface-name>]**	
Parameter	**<interface-name>**	***<interface-name>*** is the name and number of interface, if the ***<interface-name>*** parameter is not provided, then all the DHCPv6 interface information will be shown.
Default	none	
Mode	Admin and Configuration Mode	
Usage	To show the information for DHCPv6 interface, include Port Mode (Prefix delegation client. DHCPv6 server. DHCPv6 relay) , and the relative conformation information under all kinds of mode.	
Example	Switch#show ipv6 dhcp interface vlan10 Vlan10 is in server mode Using pool: poolv6 Preference value: 20 Rapid-Commit is disabled	

show ipv6 dhcp pool

Syntax	**show ipv6 dhcp pool [poolname]**	
Parameter	**[poolname]**	***<poolname>*** is the DHCPv6 address pool name which configured already, and the length less than 32 characters. If the ***<poolname>*** parameter is not provided, then all the DHCPv6 address pool information will be shown.
Default	none	
Mode	Admin and Configuration Mode	
Usage	To display the configuration and dynamic assignment information for DHCPv6 address pool, include the name of DHCPv6 address pool, the prefix of DHCPv6 address pool, excluded address, DNS server configuration, relative prefix information and so on. To display assigned address binding number of address pool that is used as address assignment server. To display assigned prefix number of address pool that is used as prefix delegation server	
Example	Switch#show ipv6 dhcp pool poolv6	

show ipv6 dhcp statistics

Syntax	**show ipv6 dhcp statistics**
Parameter	none
Default	none
Mode	Admin and Configuration Mode
Usage	To show the statistic of all kinds of DHCPv6 packets by DHCPv6 server.
Example	Switch#show ipv6 dhcp statistics Address pools 1 Active bindings 0 Expiried bindings 0 Malformed message 0 Message Received Send DHCP6SOLICIT 0 0 DHCP6ADVERTISE 0 0 DHCP6REQUEST 0 0 DHCP6REPLY 0 0 DHCP6RENEW 0 0 DHCP6REBIND 0 0 DHCP6RELEASE 0 0 DHCP6DECLINE 0 0 DHCP6CONFIRM 0 0 DHCP6RECONFIGURE 0 0 DHCP6INFORMREQ 0 0 DHCP6RELAYFORW 0 0 DHCP6RELAYREPLY 0 0

Show information	Explanation
Address pools	To configure the number of DHCPv6 address pools;
Active bindings	The number of auto assign addresses;
Expiried bindings	The number of expiried bindings;
Malformed message	The number of malformed messages;
Message Recieved	The statistic of received DHCPv6 packets.
DHCP6SOLICIT	The number of DHCPv6 SOLICIT packets.
DHCP6ADVERTISE	The number of DHCPv6 ADVERTISE packets
DHCPv6REQUEST	The number of DHCPv6 REQUEST packets
DHCP6REPLY	The number of DHCPv6 REPLY packets
DHCP6RENEW	The number of DHCPv6 RENEW packets
DHCP6REBIND	The number of DHCPv6 REBIND packets
DHCP6RELEASE	The number of DHCPv6 RELEASE packets
DHCP6DECLINE	The number of DHCPv6 DECLINE packets
DHCP6CONFIRM	The number of DHCPv6 CONFIRM packets

DHCP6RECONFIGURE	The number of DHCPv6 RECONFIGURE packets
DHCP6INFORMREQ	The number of DHCPv6 INFORMREQ packets
DHCP6RELAYFORW	The number of DHCPv6 RELAYFORW packets
DHCP6RELAYREPLY	The number of DHCPv6 RELAYREPLY packets

show ipv6 general-prefix

Syntax	**show ipv6 general-prefix**
Parameter	**none**
Default	none
Mode	Admin and Configuration Mode
Usage	To show the IPv6 general prefix pool information, include the prefix number in general prefix pool, the name of every prefix, the interface of prefix obtained, and the prefix value.
Example	Switch#show ipv6 general-prefix IPv6 Prefix my, acquired via Manual configuration 2001:da8:221::/48

show ipv6 local pool

Syntax	**show ipv6 local pool**
Parameter	none
Default	none
Mode	Admin and Configuration Mode
Usage	To show the statistic information of DHCPv6 prefix pool, include the name of prefix pool, the prefix and prefix length as well as assigned prefix length, the number of assigned prefix and information in DHCPv6 address pool.
Example	Switch#show ipv6 local pool Pool Prefix Free In use a 2010::1/0/48 65536 0

ip dhcp relay information option

Syntax	**ip dhcp relay information option** **no ip dhcp relay information option**
Parameter	**none**
Default	The system disables the option82 function by default
Mode	Global Mode
Usage	Set this command to enable the option82 function of the switch Relay Agent. The "**no ip**

	dhcp relay information option" command is used to disable the option82 function of the switch Relay Agent. Only the DHCP Relay Agents configuring with this command can add option82 to the DHCP request message, and let the server to process it. Before enabling this function, users should make sure that the DHCP service is enabled and the Relay Agent will transmit the udp broadcast messages whose destination port is 67.
Example	Enable the option82 function of the Relay Agent. Switch#config Switch(config)#service dhcp Switch(config)# ip forward-protocol udp bootps Switch(config)# ip dhcp relay information option

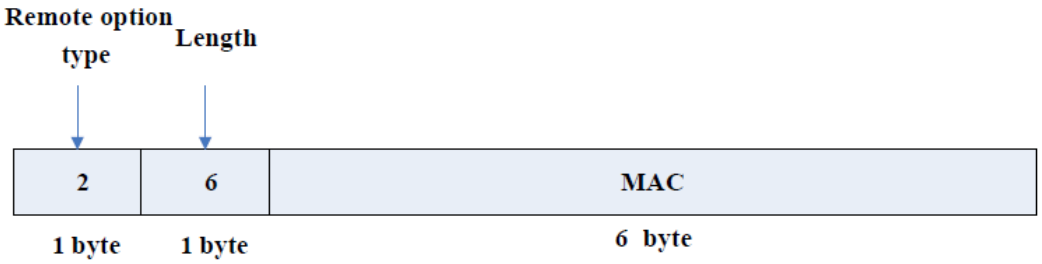
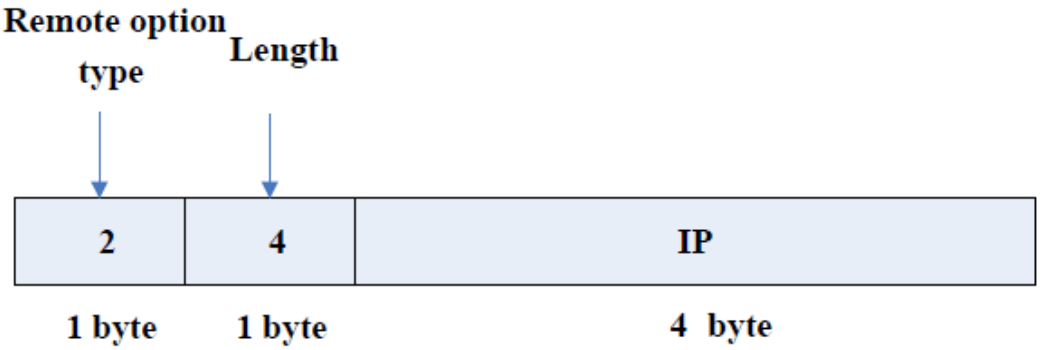
ip dhcp relay information option delimiter

Syntax	**ip dhcp relay information option delimiter [colon | dot | slash | space]** **no ip dhcp relay information option delimiter**
Parameter	none
Default	Slash("/")
Mode	Global Mode
Usage	Set the delimiter of each parameter for suboption of option82 in global mode, no command restores the delimiter as slash. Divide the parameters with the configured delimiters after users have defined them which are used to create suboption (remot-de, circuit-id) of option82 in global mode.
Example	Set the parameter delimiters as dot (".") for suboption of option82. Switch#config Switch(config)#ip dhcp relay information option delimiter dot

ip dhcp relay information option remote-id

Syntax	**ip dhcp relay information option remote-id {standard | <remote-id>}** **no ip dhcp relay information option remote-id**	
Parameter	**standard**	**standard** means the default VLAN MAC format.
	<remote-id>	<remote-id> means the remote-id content of option 82 specified by users, its length cannot exceed 64 characters.
Default	Use standard format to set remote-id of option 82	
Mode	Global Mode	
Usage	Set the suboption2 (remote ID option) content of option 82 added by DHCP request packets (They are received by the interface). The no command sets the additive suboption2 (remote ID option) format of option 82 as standard. The additive option 82 information needs to associate with third-party DHCP server, it is used to specify the remote-id content by users when the standard remote-id format cannot satisfy server's request.	
Example	Set the suboption remote-id of DHCP option82 as street-1-1. Switch#config Switch(config)#ip dhcp relay information option remote-id street-1-1	

ip dhcp relay information option remote-id format

Syntax	**ip dhcp relay information option remote-id format {default | vs-hp}**	
Parameter	**default**	default means that remote-id is the VLAN MAC address with hexadecimal format.
	vs-up	vs-hp means that remote-id is compatible with the remote-id format of HP manufacturer.
Default	default	
Mode	Global Mode	
Usage	Set remote-id format of Relay Agent option82. The default remote-id format defined as below:  MAC means VLAN MAC address. The compatible remote-id format with HP manufacturer defined as below:  IP means the primary IP address of layer 3 interface where DHCP packets from.	
Example	Set remote-id of Relay Agent option82 as the compatible format with HP manufacturer. Switch#config Switch(config)#ip dhcp relay information option remote-id format vs-hp	

ip dhcp relay information option self-defined remote-id

Syntax	**ip dhcp relay information option self-defined remote-id {hostname | mac | string WORD}** **no ip dhcp relay information option self-defined remote-id**	
Parameter	**WORD**	WORD the defined character string of remote-id by themselves, the maximum length is 64.
Default	Using standard method.	
Mode	Global Mode	
Usage	Set creation method for option82, users can define the parameters of remote-id suboption by	

	themselves. After configure this command, if users do not configure remote-id on interface, it will create remote-id suboption for option82 according to self-defined method. For mac, use the format such as 00-02-d1-2e-3a-0d if it is filled to packets with ascii format, but hex format occupies 6 bytes. Each option will be filled to packets according to the configured order of the commands and divide them with delimiter (delimiter is **ip dhcp relay information option delimiter** configuration).
Example	Set self-defined method and character string of remote-id suboption are hostname and abc respectively for option82. Switch#config Switch(config)# ip dhcp relay information option self-defined remote-id hostname string abc

ip dhcp relay information option self-defined remote-id format

Syntax	**ip dhcp relay information option self-defined remote-id format [ascii | hex]**
Parameter	none
Default	ascii
Mode	Global Mode
Usage	Set self-defined format of remote-id for relay option82. self-defined format use ip dhcp relay information option type self-defined remote-id to create remote-id format.
Example	Set self-defined method of remote-id as hex for relay option82. Switch#config Switch(config)# ip dhcp relay information option self-defined remote-id format hex

ip dhcp relay information option self-defined subscriber-id

Syntax	**ip dhcp relay information option self-defined subscriber-id {vlan | port | id (switch-id (mac | hostname)| remote-mac)| string WORD }** **no ip dhcp relay information option self-defined subscriber-id**	
Parameter	**WORD**	WORD the defined character string of circuit-id by themselves, the maximum length is 64.
Default	Using standard method.	
Mode	Global Mode	
Usage	Set creation method for option82, users can define the parameters of circute-id suboption by themselves. After configure this command, if users do not configure circuit-id on interface, it will create circuit-id suboption for option82 according to self-defined method. Self-defined format of circuit-id: if self-defined format is ascii, the filled format of vlan such as “Vlan2”, the format of port such as “Ethernet1/0/1”, the format of mac and remote-mac such as “00-02-d1-2e-3a-0d”. If self-defined format is hex, the filled format of vlan occupies 2 bytes, port occupies 4 bytes, a byte means slot (for chassis switch, it means slot ID, for box switch, it is 1), a byte means Module (the default is 0), two bytes means port ID beginning from 1, mac and remote-mac occupy 6 bytes. Each option will be filled to packets according to the	

	configured order of the commands and divide them with delimiter (delimiter is **ip dhcp relay information option delimiter** configuration).
Example	Set self-defined method of circuit-id suboption as port, mac for option82. Switch#config Switch(config)#ip dhcp relay information option self-defined subscriber-id port id switch-id mac

ip dhcp relay information option self-defined subscriber-id format

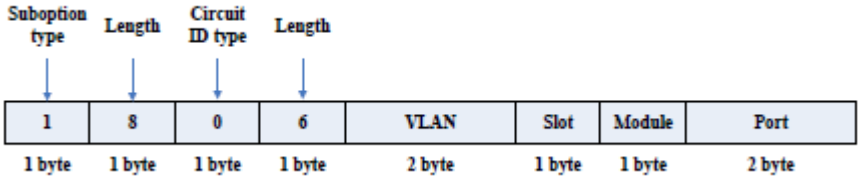
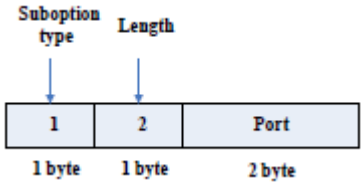
Syntax	**ip dhcp relay information option self-defined subscriber-id format [ascii | hex]**
Parameter	none
Default	ascii
Mode	Global Mode
Usage	Set self-defined format of circuit-id for relay option82. self-defined format use ip dhcp relay information option type self-defined subscriber-id to create circuit-id format.
Example	Set self-defined format of circuit-id as hex for relay option82. Switch#config Switch(config)#ip dhcp relay information option self-defined subscriber-id format hex

ip dhcp relay information option subscriber-id

Syntax	**ip dhcp relay information option subscriber-id {standard | <circuit-id>}** **no ip dhcp relay information option subscriber-id**	
Parameter	**<circuit-id>**	***<circuit-id>*** is the circuit-id contents of option82 specified by users, which is a string no longer than 64 characters.
	standard	**standard** means the standard vlan name and physical port name format
Default	The system uses the standard format to set the circuit-id of option 82 by default.	
Mode	Port mode	
Usage	Because the option 82 information added for the switch should cooperate with the third party DHCP server, if the standard circuit-id format of the switch cannot satisfy the server's request, this method will be provided for users to specify the contents of circuit-id according to the situation of the server.	
Example	Set the sub-option circuit-id of DHCP option82 as foobar. Switch#config Switch(config)#interface vlan 1 Switch(config-if-vlan1)#ip dhcp relay information option subscriber-id foobar	

ip dhcp relay information option subscriber-id format

Syntax	**ip dhcp relay information option subscriber-id format {hex | ascii | vs-hp}**	
Parameter	**hex**	hex means that subscriber-id is VLAN and port information with hexadecimal format

	ascii	acsii means that subscriber-id is VLAN and port information with ACSII format.
	vs-hp	vs-hp means that subscriber-id is compatible with the format of HP manufacturer.
Default	ascii	
Mode	Global Mode	
Usage	Set subscriber-id format of Relay Agent option82. VLAN and port information with ASCII format, such as “Vlan1+Ethernet1/0/11”, VLAN and port information with hexadecimal format defined as below:  VLAN field fills in VLAN ID. For chassis switch, Slot means slot number, for box switch, Slot is 1; default Module is 0; Port means port number which begins from 1. The compatible subscriber-id format with HP manufacturer defined as below:  Port means port number which begins from 1.	
Example	Set subscriber-id format of Relay Agent option82 as hexadecimal format. Switch#config Switch(config)#ip dhcp relay information option subscriber-id format hex	

ip dhcp relay information policy

Syntax	**ip dhcp relay information policy {drop | keep | replace}** **no ip dhcp relay information policy**	
Parameter	**drop**	drop mode means that if the message has option82, then the system will drop it without processing;
	keep	keep mode means that the system will keep the original option82 segment in the message, and forward it to the server to process
	replace	replace mode means that the system will replace the option 82 segment in the existing message with its own option 82, and forward the message to the server to process
Default	The system uses replace mode to replace the option 82 segment in the existing message with its own option 82.	
Mode	Port mode	
Usage	This command is used to set the retransmitting policy of the system for the received DHCP request message which contains option82. The “no ip dhcp relay information policy” will set the retransmitting policy of the option 82 DCHP message as “replace”.	

	Since the DHCP client messages might go through several DHCP Relay Agents when passed to the DHCP server, the latter Relay Agents on the path should set policies to decide how to process the option82 added by Relay Agents before them. The selection of option 82 retransmitting policies should take the configuration policy of the DHCP server into account.
Example	Set the retransmitting policy of DHCP messages option 82 as keep. Switch#config Switch(config)#interface vlan 1 Switch(Config-if-Vlan1)#ip dhcp relay information policy keep

ip dhcp server relay information enable

Syntax	**ip dhcp server relay information enable** **no ip dhcp server relay information enable**
Parameter	none
Default	The system disable the option82 identifying function by default.
Mode	Global Mode
Usage	This command is used to enable the switch DHCP server to identify option82. The “no ip dhcp server relay information enable” command will make the server ignore the option 82. If the users want the switch DHCP server to identify option82 and return option 82 information in the reply message, this command needs to be set, or, the switch DHCP server will ignore the option82.
Example	Set the DHCP server to support option82 Switch#config Switch(config)#interface vlan 1 Switch(Config-if-Vlan1)#ip dhcp server relay information enable

show ip dhcp relay information option

Syntax	**show ip dhcp relay information option**
Parameter	**none**
Default	none
Mode	Admin and Configuration Mode
Usage	This command will display the state information of the DHCP option 82 in the system, including option82 enabling switch, the interface retransmitting policy, the circuit ID mode and the switch DHCP server option82 enabling switch. Use this command to check the state information of Relay Agent option82 during operation.
Example	Switch#show ip dhcp relay information option ip dhcp server relay information option(i.e. option 82) is disabled ip dhcp relay information option(i.e. option 82) is enabled Vlan2: ip dhcp relay information policy keep ip dhcp relay information option subscriber-id standard Vlan3: ip dhcp relay information policy replace ip dhcp relay information option subscriber-id foobar

option 43 ascii LINE

Syntax	**option 43 ascii LINE** **no option 43**	
Parameter	**LINE**	The configured option 43 character string with ascii format, its length range between 1 and 255.
Default	No option 43 character string is configured.	
Mode	DHCP Address Pool Mode	
Usage	Configure option 43 character string with ascii format in ip dhcp pool mode. The no command deletes the configured option 43.	
Example	Configure option 43 with ascii format to be "AP 1000". Switch#config Switch(config)#ip dhcp pool a switch (dhcp-a-config)#option 43 ascii AP 1000	

option 43 hex WORD

Syntax	**option 43 hex WORD** **no option 43**	
Parameter	**WORD**	The configured option 43 character string with hex format, such as a1241b.
Default	No option 43 is configured.	
Mode	DHCP Address Pool Mode	
Usage	Configure option 43 character string with hex format in ip dhcp pool mode. The no command deletes the configured option 43. When using hex method to configure option 43, the string needs to be written according to TLV (Type-Length-Value) format. For example, issue ip address of 10.1.1.1 through option 43, then the hex string here should be 01040A010101; Type=0x01, it means IP address; Length=0x04, it means the length of IP address is 4 Bytes; Value=0x0A010101, it means the hexadecimal format of 10.1.1.1.	
Example	Configure option 43 with hex format to be "01040a010101". Switch#config Switch(config)#ip dhcp pool a switch (dhcp-a-config)#option 43 hex 01040a010101	

option 43 ip A.B.C.D

Syntax	**option 43 ip A.B.C.D** **no option 43**	
Parameter	**A.B.C.D**	The configured option 43 with IP format, such as 192.168.1.1.
Default	No option 43 is configured.	
Mode	DHCP Address Pool Mode	

Usage	Configure option 43 character string with IP format in ip dhcp pool mode. The no command deletes the configured option 43. Using this command to configure option 43, such as "192.168.1.1", then option 43 filled in packets is "C0A80101".
Example	Configure option 43 with IP format to be "192.168.1.1". Switch#config Switch(config)#ip dhcp pool a switch (dhcp-a-config)#option 43 ip 192.168.1.1

option 60 ascii LINE

Syntax	**option 60 ascii LINE** **no option 60**	
Parameter	**LINE**	The configured option 60 character string with ascii format, its length range between 1 and 255.
Default	No option 60 character string is configured.	
Mode	DHCP Address Pool Mode	
Usage	Configure option 60 character string with ascii format in ip dhcp pool mode. The no command deletes the configured option 60.	
Example	Configure option 60 with ascii format to be "AP 1000". Switch#config Switch(config)#ip dhcp pool a switch (dhcp-a-config)#option 60 ascii AP 1000	

option 60 hex WORD

Syntax	**option 60 hex WORD** **no option 60**	
Parameter	**WORD**	The configured option 60 character string with hex format, such as a1241b
Default	No option 60 is configured.	
Mode	DHCP Address Pool Mode	
Usage	Configure option 60 character string with hex format in ip dhcp pool mode. The no command deletes the configured option 60.	
Example	Configure option 60 with hex format to be "01040a010101". Switch#config Switch(config)#ip dhcp pool a switch (dhcp-a-config)#option 60 hex 01040a010101	

option 60 ip A.B.C.D

Syntax	**option 60 ip A.B.C.D**

	no option 60	
Parameter	**A.B.C.D**	The configured option 60 with IP format, such as 192.168.1.1.
Default	No option 60 is configured.	
Mode	DHCP Address Pool Mode	
Usage	Configure option 60 character string with IP format in ip dhcp pool mode. The no command deletes the configured option 60. Using this command to configure option 60, such as "192.168.1.1", option 60 of packets matched with the configured option 60 is "C0A80101".	
Example	Configure option 60 with IP format to be "192.168.1.1". Switch#config Switch(config)#ip dhcp pool a switch (dhcp-a-config)#option 60 ip 192.168.1.1	

address range

Syntax	**address range <start-ip> <end-ip>** **no address range <start-ip> <end-ip>**	
Parameter	**<start-ip>**	defines the start address of the address pool
	<end-ip>	defines the end address of the address pool
Default	None	
Mode	DHCPv6 address pool class configuration mode	
Usage	This command is used to set address range for a DHCPv6 class in DHCPv6 address pool configuration mode, the no command is used to remove the address range. The prefix/plen form is not supported. It is necessary to check the address range assigned to class in order to make sure that it doesn't exceed the address range of relevant address pool. A class is assigned a single address range and the address range assigned to different class in the same address pool can overlap. If you do not use this command to assign address range for a DHCPv6 class, then the range for it will be the whole subnet of the address pool by default.	
Example	Associate a DHCPv6 class named CLASS1 to dhcpv6 pool 1 and assign the address range from 2001:da8:100:1::2 to 2001:da8:100:1::30 for CLASS1. Switch#config Switch(config)#ipv6 dhcp pool 1 Switch(dhcp-1-config)#class CLASS1 Switch(dhcp-1-class-CLASS1-config)#address range 2001:da8:100:1::2 2001:da8:100:1::30	

class

Syntax	**class <class-name>** **no class <class-name>**	
Parameter	**<class-name>**	name of DHCPv6 class.
Default	none	

Mode	DHCPv6 address pool class configuration mode
Usage	This command associates class to address pool in DHCPv6 address pool configuration mode and enters class configuration mode in address pool. Use the no command to remove the link. It is recommended to define this class first using global command of IPv6 DHCP class. No class will be created if you input a class name which doesn't exist.
Example	Associate the DHCPv6 class named CLASS1 to dhcpv6 pool 1. Switch(Config)#ipv6 dhcp pool 1 Switch(dhcp-1-config)#class CLASS1

ipv6 dhcp class

Syntax	**ipv6 dhcp class <class-name>** **no ipv6 dhcp class <class-name>**	
Parameter	**<class-name>**	the name of DHCPv6 class which is a string with a length of less than 32
Default	none	
Mode	Global Mode	
Usage	This command defines a DHCPv6 class and enters DHCPv6 class configuration mode, the no operation of this command removes this DHCPv6 class. Configure a group of option 37 or option 38, or configure option 37 and option 38 simultaneously in a DHCPv6 class. This command can be used when the server supports DHCPv6 class only.	
Example	Define a DHCPv6 class named CLASS1. Switch(config)#ipv6 dhcp class CLASS1	

ipv6 dhcp relay remote-id

Syntax	**ipv6 dhcp relay remote-id <remote-id>** **no ipv6 dhcp relay remote-id**	
Parameter	**<remote-id>**	user-defined content of option 37.
Default	Using vlan MAC address as remote-id content by default such as "00-01-ac-12-23" with '-' hyphen.	
Mode	Port mode	
Usage	This command is used to set the form of adding option 37 in received DHCPv6 request packets, of which <remote-id> is the remote-id in user-defined option 37 and it is a string with a length of less than 128. The no operation of this command restores remote-id in option 37 to enterprise-number together with vlan MAC address. Because the option 37 information added by switch may associate with third-party DHCPv6 servers, users can specify the remote-id content based on server condition when default remote-id of the switch cannot satisfy the demand of server. The enterprise-number together with vlan MAC address is used as the remote-id by default.	

Example	Enable abc as the remote-id of DHCPv6 option 37. Switch#config Switch(config)#interface vlan 1 Switch(config-if-vlan1)# ipv6 dhcp relay remote-id abc

ipv6 dhcp relay remote-id option

Syntax	**ipv6 dhcp relay remote-id option** **no ipv6 dhcp relay remote-id option**
Parameter	**none**
Default	Disable the relay option 37.
Mode	Global Mode
Usage	This command enables switch relay to support the option 37, the no form of this command disables it. Only after this command is configured, DHCPv6 relay agent can add option 37 in DHCPv6 request packets before sending it to server or next relay agent. Make sure that DHCPv6 service has been enabled before execute this command.
Example	Enable the switch relay to support option 37. Switch#config Switch(config)#service dhcpv6 Switch(config)#ipv6 dhcp relay remote-id option

ipv6 dhcp relay subscriber-id

Syntax	**ipv6 dhcp relay subscriber-id <subscriber-id>** **no ipv6 dhcp relay subscriber-id**
Parameter	**<subscriber-id>** user-defined content of option 38
Default	Set subscriber-id in option 38 to vlan name together with port name.
Mode	Port mode
Usage	This command is used to set the form of adding option 38 in received DHCPv6 request packets, of which <subscriber-id> is the subscriber-id in user-defined option 38 and it is a string with a length of less than 128. Because the option 38 information added by switch may associate with third-party DHCPv6 servers, users can specify the subscriber-id content based on server condition when standard subscriber-id of the switch cannot satisfy the demand of server. The vlan name together with physical port name is used as the subscriber-id in option 38 by default.
Example	Enable abc as the subscriber-id of DHCPv6 option 38. Switch#config Switch(config) # interface vlan 1 Switch(config-if-vlan1)# ipv6 dhcp relay subscriber-id abc

ipv6 dhcp relay subscriber-id option

Syntax	**ipv6 dhcp relay subscriber-id option** **no ipv6 dhcp relay subscriber-id option**
Parameter	**none**
Default	Disable the relay option 38.
Mode	Global Mode
Usage	Only after this command is configured, DHCPv6 relay agent can add option 38 in DHCPv6 request packets before sending it to server or next relay agent. Make sure that DHCPv6 service has been enabled before execute this command. The option 38 of switch relay is disabled by default.
Example	Enable the switch relay to support option 38. Switch#config Switch(config) # service dhcpv6 Switch(Config)#ipv6 dhcp relay subscriber-id option

ipv6 dhcp relay subscriber-id select delimiter

Syntax	**ipv6 dhcp relay subscriber-id select (sp | sv | pv | spv) delimiter WORD (delimiter WORD |)** **no ipv6 dhcp relay subscriber-id select delimiter**	
Parameter	**(sp | sv | pv | spv)**	a selection in combinations of slot, port and vlan, among which **sp** represents slot and port, **sv** represents slot and vlan, **pv** represents port and vlan, and **spv** represents slot, port and vlan.
	WORD	the delimiter between slot, port and vlan which ranges among (#|.|,|;|:|/|space). Note that there're two **delimiter WORDs** here, of which the former is the delimiter between slot and port and the latter is the one between port and vlan.
Default	Null	
Mode	Global Mode	
Usage	Configures user configuration options to generate subscriber-id. The no form of this command restores to its original default configuration, i.e. vlan name together with port name. The command has no effect on ports with self-defined subscriber-id. If user redefines the subscriber-id of the port after using the command, the user-defined one prevails. This configuration is null by default.	
Example	Switch#config Switch(config)#ipv6 dhcp relay subscriber-id select sp delimiter #	

ipv6 dhcp server remote-id option

Syntax	**ipv6 dhcp server remote-id option**

	no ipv6 dhcp server remote-id option
Parameter	None
Default	Do not support option 37.
Mode	Global Mode
Usage	This command enables DHCPv6 server to support the identification of option 37, the no form of this command disables it. Configure this command if option 37 options is expected to be identified and processed by DHCPv6 server, otherwise they will be ignored. Option 37 is not supported by default.
Example	Enable the DHCPv6 server to support option 37. Switch#config Switch(config)#ipv6 dhcp server remote-id option

ip dhcp server select relay-forw

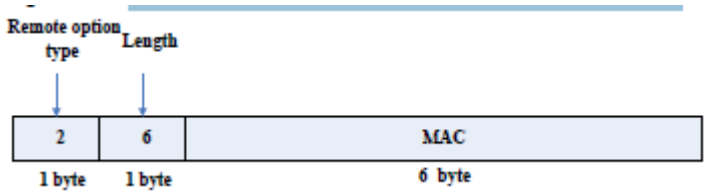
Syntax	**ipv6 dhcp server select relay-forw** **no ipv6 dhcp server select relay-forw**
Parameter	none
Default	Selecting option 37 and option 38 of the original packets.
Mode	Global Mode
Usage	This command enables the DHCPv6 server to support selections when multiple option 37 or option 38 options exist and the option 37 and option 38 of relay-forw in the innermost layer are selected. The no operation of it restores the default configuration, i.e. selecting option 37 and option 38 of the original packets. Make sure that the server has been enabled to support option 37 and option 38 before use this command. The system selects option 37 and option 38 of the original packets by default.
Example	Configure that the vlan1 interface of DHCPv6 server selects option 37 and option 38 of relay-forw in the innermost layer. Switch#config Switch(config)#interface vlan 1 Switch(config-if-vlan1)# ipv6 dhcp server select relay-forw

ipv6 dhcp server subscriber-id option

Syntax	**ipv6 dhcp server subscriber-id option** **no ipv6 dhcp server subscriber-id option**
Parameter	none
Default	Do not support option 38.
Mode	Global Mode
Usage	This command enables DHCPv6 server to support the identification of option 38, the no operation of this command disables it. Configure this command if option 38 is expected to be identified and processed by DHCPv6 server, otherwise they will be ignored. option 38 is not supported by default.

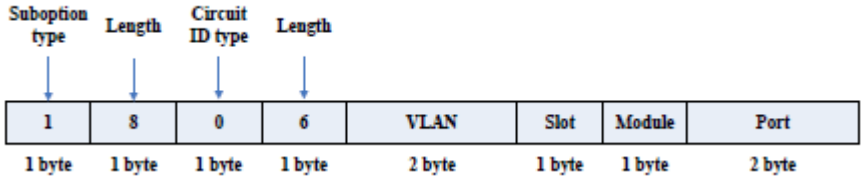
Example	Enable DHCPv6 server to support option 38. Switch#config Switch(config)#ipv6 dhcp server subscriber-id option

ipv6 dhcp snooping information option remote-id format

Syntax	**ipv6 dhcp snooping information option remote-id format {hex | ascii }**	
Parameter	**hex**	Hex means that the remote-id is the VLAN MAC address of the hexadecimal switch.
	ascii	acsii means that the remote-id is the VLAN MAC address of the acsii format switch.
Default	ascii	
Mode	Global Mode	
Usage	This command can configure the remote-id format of the switch relay agent's DHCPv6 option37. The hexadecimal remote-id format's definition is as below:  The MAC is the VLAN MAC address of the switch.	
Example	Configure the default remote-id format of the switch relay agent's DHCPv6 option37. Switch#config Switch(config)#ipv6 dhcp snooping information option remote-id format ascii	

+

ipv6 dhcp snooping information option subscriber-id format

Syntax	**ipv6 dhcp snooping information option subscriber-id format {hex | ascii }**	
Parameter	**hex**	hex means that the subscriber-id is the hexadecimal VLAN and port information
	ascii	acsii means that the subscriber-id is the ACSII VLAN and port information.
Default	ascii	
Mode	Global Mode	
Usage	Configure the default subscribe-id format of the switch DHCPv6 snooping option38. The ACSII VLAN and port information is as Vlan1+Ethernet1/0/11. The hexadecimal VLAN and port information is defined as below:  The VLAN field is written with the switch VLAN ID. For the rackmount switch, Slot means	

	the slot number; for the cassette switch, it is 1. The default module is 0. Port means the port number and starts from 1.
Example	Configure the subscribe-id format of the switch DHCPv6 snooping option38 as the hexadecimal format. Switch#config Switch(config)#ipv6 dhcp snooping information option subscriber-id format hex

ipv6 dhcp snooping remote-id

Syntax	**ipv6 dhcp snooping remote-id <remote-id>** **no ipv6 dhcp snooping remote-id**
Parameter	**<remote-id>** user-defined content of option 37.
Default	Using vlan MAC address as remote-id content by default such as “00-01-ac-12-23” with ‘-’ hyphen.
Mode	Port mode
Usage	This command is used to set the form of adding option 37 in received DHCPv6 request packets, of which <remote-id> is the content of remote-id in user-defined option 37 and it is a string with a length of less than 128. The no form of this command restores remote-id in option 37 to enterprise-number together with vlan MAC address. Because option 37 information added by switch may associate with third-party DHCPv6 servers, users can specify remote-id content based on server condition when standard remote-id of the switch cannot satisfy the demand of server. The enterprise-number together with vlan MAC address is used as the remote-id by default.
Example	Enable abc as remote-id of DHCPv6 option 37. Switch#config Switch(config)#interface ethernet 1/0/1 Switch(config-if-Ethernet1/0/1)#ipv6 dhcp snooping remote-id abc

ipv6 dhcp snooping remote-id option

Syntax	**ipv6 dhcp snooping remote-id option** **no ipv6 dhcp snooping remote-id option**
Parameter	none
Default	Disable.
Mode	Global Mode
Usage	This command enables DHCPv6 SNOOPING to support option 37, the no form of this command disables it. Only after this command is configured, DHCPv6 SNOOPING can add option 37 in DHCPv6 packets before sending it to server or relay agent. Make sure that DHCPv6 SNOOPING has been enabled before execute this command. The system disables option 37 of DHCPv6 SNOOPING by default.
Example	Enable option 37 in DHCPv6 SNOOPING. Switch#config Switch(config)#ipv6 dhcp snooping enable

	Switch(config)#ipv6 dhcp snooping remote-id option

ipv6 dhcp snooping remote-id policy

Syntax	**ipv6 dhcp snooping remote-id policy {drop | keep | replace}** **no ipv6 dhcp snooping remote-id policy**	
Parameter	**drop**	The system only discards it via option 37
	keep	The system keeps option 37 unchanged and forwards the packet
	replace	The system will replace the option 37 field in the existing message with its own option 37 before forwarding the message to the server.
Default	Using replace mode to replace option 37 of current packets with system's own.	
Mode	Global Mode	
Usage	Since DHCPv6 client packets may already include option 37 information, corresponding processing policy of DHCPv6 SNOOPING is required to develop. If the forwarding policy is set as **replace**, option 37 has to be enabled in advance. Use replace mode to replace option 37 of current packets with system's own by default.	
Example	Configure the reforward policy of DHCPv6 packets with option 37 as keep for DHCPv6 SNOOPING Switch#config Switch(config)#ipv6 dhcp snooping remote-id policy keep	

ipv6 dhcp snooping subscriber-id

Syntax	**ipv6 dhcp snooping subscriber-id <subscriber-id>** **no ipv6 dhcp snooping subscriber-id**	
Parameter	<subscriber-id>	user-defined content of option 38
Default	Set subscriber-id in option 38 to vlan name together with port name.	
Mode	Port mode	
Usage	This command is used to set the form of adding option 38 in received DHCPv6 request packets, of which <subscriber-id> is the content of subscriber-id in user-defined option 38 and it is a string with a length of less than 128. The no operation of this command restores subscriber-id in option 38 to vlan name together with port name such as "Vlan2+Ethernet1/0/2". Because option 38 information added by switch may associate with third-party DHCPv6 servers, users can specify subscriber-id content based on server condition when standard subscriber-id of the switch cannot satisfy the demand of server. The vlan name together with physical port name is used as subscriber-id in option 38 by default.	
Example	Enable abc as subscriber-id of DHCPv6 option 38. Switch#config Switch(config)#interface ethernet 1/0/1 Switch(config-if-ethernet1/0/1)#ipv6 dhcp snooping subscriber-id abc	

ipv6 dhcp snooping subscriber-id option

Syntax	**ipv6 dhcp snooping subscriber-id option** **no ipv6 dhcp snooping subscriber-id option**
Parameter	none
Default	Disable option 38 of DHCPv6 SNOOPING.
Mode	DHCP Address Pool Mode
Usage	This command enables DHCPv6 SNOOPING to support option 38, the no form of this command disables it. Only after this command is configured, DHCPv6 SNOOPING can add option 38 in DHCPv6 packets before sending it to server or relay agent. Make sure that DHCPv6 SNOOPING has been enabled before executing this command.The system disables option 38 of DHCPv6 SNOOPING by default.
Example	Enable option 38 in DHCPv6 SNOOPING. Switch#config Switch(config)#ipv6 dhcp snooping enable Switch(config)#ipv6 dhcp snooping subscriber-id option

ipv6 dhcp snooping subscriber-id policy

Syntax	**ipv6 dhcp snooping subscriber-id policy {drop | keep | replace}** **no ipv6 dhcp snooping subscriber-id policy**	
Parameter	**drop**	The system only discards it via option 38
	keep	The system keeps option 38 unchanged and forwards the packet
	replace	The system will replace the option 38 field in the existing message with its own option 38 before forwarding the message to the server.
Default	Using replace mode to replace option 38 of current packets with system's own.	
Mode	Global Mode	
Usage	Since DHCPv6 client packets may already include option 38 information, corresponding processing policy of DHCPv6 SNOOPING is requested to develop. If the reforward policy is set as **replace**, option 38 has to be enabled in advance. The system disables option 38 of DHCPv6 SNOOPING by default.	
Example	Set the reforward policy of DHCPv6 packets with option 38 as keep for DHCPv6 SNOOPING. Switch#config Switch(config)#ipv6 dhcp snooping subscriber-id policy keep	

ipv6 dhcp snooping subscriber-id select delimiter

Syntax	**ipv6 dhcp snooping subscriber-id select (sp | sv | pv | spv) delimiter WORD (delimiter WORD |)** **no ipv6 dhcp snooping subscriber-id select delimiter**	
Parameter	**(sp | sv | pv | spv)**	a selection from combinations of slot, port and vlan, among which **sp** represents slot and port, **sv** represents slot and

		vlan, **pv** represents port and vlan, and **spv** represents slot, port and vlan.
	WORD	the delimiter between slot, port and vlan which ranges among (#|.|,|;|:|/|space). Note that there're two delimiter WORDs here, of which the former is the delimiter between slot and port while the latter is that between port and vlan.
Default	null	
Mode	Global Mode	
Usage	Configure user configuration options to generate subscriber-id. The no form of this command restores to its original default configuration, i.e. vlan name together with port name. This command has no effect on ports with self-defined subscriber-id. If a user redefines subscriber-id of the port after configuring the command, the user-defined one prevails. This configuration is null by default.	
Example	Switch#config Switch(config)#ipv6 dhcp snooping subscriber-id select sv delimiter #	

ipv6 dhcp use class

Syntax	**ipv6 dhcp use class** **no ipv6 dhcp use class**	
Parameter	none	
Default	DHCPv6 server supports DHCPv6 class during address assignment.	
Mode	Global Mode	
Usage	This command enables DHCPv6 server to support DHCPv6 class during address assignment, the no operation of this command disables it without removing the relative DHCPv6 class information that has been configured. By default, DHCPv6 servers support DHCPv6 class during address assignment and the no form of this command doesn't remove DHCPv6 class information that has been configured. Make sure that DHCPv6 service has been enabled before using this command. DHCPv6 server supports DHCPv6 class during address assignment by default.	
Example	Configure DHCPv6 server to support DHCPv6 class during address assignment. Switch#config Switch(config)# ipv6 dhcp use class	

remote-id subscriber-id

Syntax	**{remote-id [*] <remote-id> [*] | subscriber-id [*] <subscriber-id> [*]}** **no {remote-id [*] <remote-id> [*] | subscriber-id [*] < subscriber-id> [*]}**	
Parameter	**<remote-id>**	a string with a length ranging from 1 to 128 bytes is used to match remote-id in option 37.
	<subscriber-id>	a string with a length ranging from 1 to 128 bytes is used to match subscriber-id in option 38.
	[*]	match zero or more characters.

Default	None
Mode	IPv6 DHCP Class configuration mode
Usage	This command configures option 37 and option 38 that match the class in IPv6 DHCP class configuration mode. This command configures a mode which matches with the already-defined DHCPv6 class, and a DHCPv6 class may configure multiple commands. If this command is ignored and no mode configured in IPv6 DHCP Class mode, any remote-id or subscriber-id is considered to match with the DHCPv6 class, however, remote-id or subscriber-id must exist in DHCPv6 packet.
Example	Configure some remote-id or subscriber-id belonging to DHCPv6 class named CLASS1. Switch#config Switch(config)#ipv6 dhcp class CLASS1 Switch(dhcpv6-class-class1-config)#remote-id abc* subscriber-id bcd* Switch(dhcpv6-class-class1-config)#remote-id edf* Switch(dhcpv6-class-class1-config)#subscriber-id *mmn

show ipv6 dhcp relay option

Syntax	**show ipv6 dhcp relay option**
Parameter	none
Default	none
Mode	Admin and Configuration Mode
Usage	Use this command to check relay agents' configuration status for option 37 and option 38.
Example	Switch#show ipv6 dhcp relay option remote-id option enable subscriber-id option enable Interface Vlan 1: remote-id option configure "abc"

show ipv6 dhcp snooping option

Syntax	**show ipv6 dhcp snooping option**
Parameter	none
Default	none
Mode	Admin and Configuration Mode
Usage	Use this command to check snooping configuration status for option 37 and option 38.
Example	Switch#show ipv6 dhcp snooping option remote-id option enable subscriber-id option enable The slot port vlan select option is : port and vlan The delimiter is : #

enable trustview key

Syntax	**enable trustview key {0 | 7} <password>** **no enable trustview key**	
Parameter	**<password>**	***<password>*** is character string length less than 16, which use as encrypted key.
	{0 | 7}	0 for un-encrypted text for the password, while 7 for encrypted.
Default	Disabled	
Mode	Global Mode	
Usage	To configure DES encrypted key for private packets, this command is also the switch for the private packets encrypt and hash function enabled or not. The switch communicates with the TrustView management system through private protocols. By default these packets are not encrypted. In order to prevent spoofing, it can be configured to encrypt these packets. And at the same time, the same password should be configured on TrustView server.	
Example	Enable encrypt or hash function of private message Switch#config Switch(config)# enable trustview key 0 switch	

ip dhcp snooping

Syntax	**ip dhcp snooping enable** **no ip dhcp snooping enable**	
Parameter	none	
Default	DHCP Snooping is disabled by default	
Mode	Global Mode	
Usage	Enable the DHCP Snooping function. When this function is enabled, it will monitor all the DHCP Server packets of non-trusted ports.	
Example	Enable the DHCP Snooping function. Switch#config Switch(config)#ip dhcp snooping enable	

ip dhcp snooping action

Syntax	**ip dhcp snooping action {shutdown | blackhole} [recovery <second>]** **no ip dhcp snooping action**	
Parameter	**shutdown**	When the port detects a fake DHCP Server, it will be shutdown.
	blackhole	When the port detects a fake DHCP Server, the vid and source MAC of the fake packet will be used to block the traffic from this MAC.
	recovery	Users can set to recover after the automatic defense action being executed.(no shut ports or delete correponding blackhole）.
	<second>	Users can set how long after the execution of defense action to recover. The unit is second, and valid range is 10-3600.
Default	No default defense action.	

Mode	Port mode
Usage	Set or delete the automatic defense action of a port. Only when DHCP Snooping is globally enabled, can this command be set. Trusted port will not detect fake DHCP Server, so, will never trigger the corresponding defense action. When a port turns into a trusted port from a non-trusted port, the original defense action of the port will be automatically deleted.
Example	Set the DHCP Snooping defense action of port ethernet1/0/1 as setting blackhole, and the recovery time is 30 seconds. Switch#config Switch(config)#interface ethernet 1/0/1 Switch(Config-Ethernet1/0/1)#ip dhcp snooping action blackhole recovery 30

ip dhcp snooping action MaxNum

Syntax	**ip dhcp snooping action {<maxNum>|default}**	
Parameter	**<maxNum>**	the number of defense action on each port, the range of which is 1-200, and the value of which is 10 by default.
	default	recover to the default value.
Default	The default value is 10.	
Mode	Global Mode	
Usage	Set the number of defense action that can be simultaneously took effect. Set the max number of defense actions to avoid the resource exhaustion of the switch caused by attacks. If the number of alarm information is larger than the set value, then the earliest defense action will be recovered forcibly in order to send new defense actions.	
Example	Set the number of port defense actions as 100. Switch#config Switch(config)#ip dhcp snooping action 100	

ip dhcp snooping binding

Syntax	**ip dhcp snooping binding enable** **no ip dhcp snooping binding enable**
Parameter	**none**
Default	DHCP Snooping binding is disabled by default.
Mode	Global Mode
Usage	Enable the DHCP Snooping binding funciton When the function is enabled, it will record the binding information allocated by DHCP Server of all trusted ports. Only after the DHCP SNOOPING function is enabled, the binding function can be enabled.
Example	Enable the DHCP Snooping binding funciton. Switch#config Switch(config)#ip dhcp snooping binding enable

ip dhcp snooping binding dot1x

Syntax	**ip dhcp snooping binding dot1x** **no ip dhcp snooping binding dot1x**
Parameter	**none**
Default	By default, the binding DOT1X funciton is disabled on all ports.
Mode	Port mode
Usage	When this function is enabled, DHCP SNOOPING will notify the DOT1X module about the captured bindng information as a DOT1X controlled user. This command is mutually exclusive to"ip dhcp snooping binding user-contro"command. Only after the DHCP SNOOPING binding function is enabled, the binding dot1x function can be set.
Example	Enable the binding DOT1X funciton on port ethernet1/0/1. Switch#config Switch(config) #interface ethernet 1/0/1 switch(Config-Ethernet 1/0/1)# ip dhcp snooping binding dot1x

ip dhcp snooping binding user

Syntax	**ip dhcp snooping binding user <mac> address <ipaddress> vlan <vlan-id> interface [Ethernet] <ifname>** **no ip dhcp snooping binding user <mac> interface [Ethernet] <ifname>**	
Parameter	**<mac>**	The MAC address of the static binding user, whic is the only index of the binding user.
	<ipaddress>	The IP address of the static binding user
	<vlan-id>	The VLAN ID of static binding user
	<ifname>	The access interface of static binding user
Default	DHCP Snooping has no static binding list entry by default.	
Mode	Global Mode	
Usage	The static binding users is deal in the same way as the dynamic binding users captured by DHCP SNOOPING; the follwoing actions are all allowed: notifying DOT1X to be a controlled user of DOT1X, adding a trusted user list entry directly, adding a bingding ARP list entry. The static binding uses will never be aged, and have a priority higher than dynamic binding users. Only after the DHCP SNOOPING binding function is enabled, the static binding users can be enabled.	
Example	Configure static binding users. Switch#config Switch(config)#ip dhcp snooping binding user 00-11-22-33-44-55 address 1.1.1.1 vlan 1 interface ethernet 1/0/14	

ip dhcp snooping binding user-control

Syntax	**ip dhcp snooping binding user-control** **no ip dhcp snooping binding user-control**
Parameter	None
Default	By default, the binding user funciton is disabled on all ports.
Mode	Port mode
Usage	When this function is enabled, DHCP SNOOPING will treat the captured binding information as trusted users allowed to access all resources. This command is mutually exclusive to “ip dhcp snooping binding dot1x“ command. Only after DHCP SNOOPING binding function is enabled, the binding user function can be set. This command is not limited by “ip dhcp snooping“ based on VLAN, but it is only limited by the global “ip dhcp snooping enable“ command.
Example	Enable the binding USER funciton on port ethernet1/0/1. Switch#config Switch(config)#interface ethernet 1/0/1 Switch(Config-Ethernet 1/0/1)# ip dhcp snooping binding user-control

ip dhcp snooping binding user-control max-user

Syntax	**ipv6 dhcp snooping binding user-control max-user <number>** **no ip dhcp snooping binding user-control max-user**	
Parameter	**<number>**	***<number>*** the max number of users allowed to access the port, from 0 to 1024.
Default	The max number of users allowed by each port to access is 1024.	
Mode	Port mode	
Usage	Set the max number of users allowed to access the port when enabling DHCP Snooping binding user funciton; the no operation of this command will restore default value. This command defines the max number of trust users distributed according to binding information, with **ip dhcp snooping binding user-contrl** enabled on the port. By default, the number is 1024. Considering the limited hardware resources of the switch, the actual number of trust users distributed depends on the resource amount. If a bigger max number of users is set using this command, DHCP Snooping will distribute the binding informaiton of untrust users to hardware to be trust users as long as there is enough available resources. Otherwise, DHCP Snooping will change the distributed binging informaiton accordint to the new smaller max user number. When the number of distributed bingding informaiton entries reaches the max limit, no new DHCP will be able to become trust user or to access other network resouces via the switch.	
Example	Enable DHCP Snooping binding user funtion on Port ethernet1/0/1, setting the max number of user allowed to access by Port Ethernet1/0/1 as 5. 。 Switch#config Switch(config)#interface ethernet 1/0/1 Switch(config-ethernet 1/0/1)#ip dhcp snooping binding user-control max-user 5	

ip dhcp snooping information enable

Syntax	**ip dhcp snooping information enable** **no ip dhcp snooping information enable**
Parameter	none
Default	Option 82 function is disabled in DHCP Snooping by default.
Mode	Global Mode
Usage	This command will enable option 82 function of DHCP Snooping on the switch, the no operation of this command will disable that function. Only by implementing this command, can DHCP Snooping add standard option 82 to DHCP request messages and forward the message. The format of option1 in option 82 (Circuit ID option) is standard vlan name plus physical port name, like vlan1+ethernet1/0/12. That of option2 in option 82 (remote ID option) is CPU MAC of the switch, like 00030f023301. If a DHCP request message with option 82 options is received, DHCP Snooping will replace those options in the message with its own. If a DHCP reply message with option 82 options is received, DHCP Snooping will dump those options in the message and forward it.
Example	Enable option 82 function of DHCP Snooping on the switch. Switch#config Switch(config)#ip dhcp snooping enable Switch(config)# ip dhcp snooping binding enable Switch(config)# ip dhcp snooping information enable

ip dhcp snooping information option allow-untrusted (replace|)

Syntax	**ip dhcp snooping information option allow-untrusted (replace)** **no ip dhcp snooping information option allow-untrusted (replace)**	
Parameter	**(replace)**	When the "replace" is setting, the potion82 option is allowed to replace.
Default	Drop DHCP packets with option82 option received by untrusted ports.	
Mode	Global Mode	
Usage	This command is used to set that allow untrusted ports of DHCP snooping to receive DHCP packets with option82 option. When disabling this command, all untrusted ports will drop DHCP packets with option82 option. Usually the switch with DHCP snooping function connects the terminal user directly, so close allow-untrusted by default to avoid option82 option added by user privately. Please set uplink port as trust port when enabling the uplink of DHCP snooping function.	
Example	Enable the function that receives DHCP packets with option82 Switch#config Switch(config)#ip dhcp snooping information option allow-untrusted	

ip dhcp snooping information option delimiter

Syntax	**ip dhcp snooping information option delimiter [colon | dot | slash | space]** **no ip dhcp snooping information option delimiter**
Parameter	none
Default	slash（“/”）
Mode	Global Mode

Usage	Set the delimiter of each parameter for suboption of option82 in global mode, no command restores the delimiter as slash. Divide parameters with the configured delimiters after users have defined them which are used to create suboption (remote-id, circuit-id) of option82 in global mode.
Example	Set the parameter delimiters as dot (".") for suboption of option82. Switch#config Switch(config)#ip dhcp snooping information option delimiter dot

ip dhcp snooping information option remote-id

Syntax	**ip dhcp snooping information option remote-id {standard | <remote-id>}** **no ip dhcp snooping information option remote-id**	
Parameter	**standard**	standard means the default VLAN MAC format
	<remote-id>	***<remote-id>*** means the remote-id content of option 82 specified by users, its length can not exceed 64 characters.
Default	Use standard format to set remote-id.	
Mode	Global Mode	
Usage	The additive option 82 needs to associate with third-party DHCP server, it is used to specify the remote-id content by users when the standard remote-id format can not satisfy server's request 。	
Example	Set the suboption remote-id of DHCP option82 as street-1-1. Switch#config Switch(config)#ip dhcp snooping information option remote-id street-1-1	

ip dhcp snooping information option self-defined remote-id

Syntax	**ip dhcp snooping information option self-defined remote-id {hostname | mac | string WORD}** **no ip dhcp snooping information option self-defined remote-id**	
Parameter	**WORD**	**WORD** the defined character string of remote-id by themselves, the maximum length is 64.
Default	Using standard method.	
Mode	Global Mode	
Usage	Set creation method for option82, users can define the parameters of remote-id suboption by themselves. After configure this command, if users do not configure ip dhcp snooping information option remote-id globally, it will create remote-id suboption for option82 according to self-defined method. For mac, use the format such as 00-02-d1-2e-3a-0d if it is filled to packets with ascii format, but hex format occpies 6 bytes. Each option will be filled to packets according to the configured order of the commands and divide them with delimiter (delimiter is **ip dhcp snooping information option delimiter** configuration).	
Example	Set self-defined method and character string of remote-id suboption are mac and abc respectively for option82. Switch#config	

	Switch(config)#ip dhcp snooping information option self-defined remote-id mac string abc

ip dhcp snooping information option self-defined remote-id format

Syntax	**ip dhcp snooping information option self-defined remote-id format [ascii | hex]**	
Parameter	**hex**	hex means that the remote-id is the hexadecimal VLAN and port information
	ascii	acsii means that the remote-id is the ACSII VLAN and port information.
Default	ascii	
Mode	Global Mode	
Usage	Set self-defined format of remote-id for snooping option82. self-defined format use ip dhcp snooping information option type self-defined remote-id to create remote-id format.	
Example	Set self-defined format of remote-id as hex for snooping option82. Switch#config Switch(config)#ip dhcp snooping information option self-defined remote-id format hex	

ip dhcp snooping information option self-defined subscriber-id

Syntax	**ip dhcp snooping information option self-defined subscriber-id {vlan | port | id (switch-id (mac | hostname)| remote-mac) | string WORD}** **no ip dhcp snooping information option type self-defined subscriber-id**	
Parameter	**WORD**	**WORD** the defined character string of circuit-id by themselves, the maximum length is 64.
Default	Using standard method.	
Mode	Global Mode	
Usage	Set creation method for option82, users can define the parameters of circute-id suboption by themselves. After configure this command, if users do not configure circuit-id on port, it will create circuit-id suboption for option82 according to self-defined method. Self-defined format of circuit-id: if self-defined subscriber-id format is ascii, the filled format of vlan such as "Vlan2", the format of port such as "Ethernet1/0/1", the format of mac and remote-mac such as "00-02-d1-2e-3a-0d". If self-defined format is hex, the filled format of vlan occupies 2 bytes, port occupies 4 bytes, a byte means slot (for chassis switch, it means slot ID, for box switch, it is 1), a byte means Module (the default is 0), two bytes means port ID beginning from 1, mac and remote-mac occupy 6 bytes. Each option will be filled to packets according to the configured order of the commands and divide them with delimiter (delimiter is **ip dhcp snooping information option delimiter** configuration).	
Example	Set self-defined method of circuit-id suboption as vlan, port, mac and remote-mac for option82. Switch#config Switch(config)#ip dhcp snooping information option self-defined subscriber-id vlan port id	

	remote-mac

ip dhcp snooping information option self-defined subscriber-id format

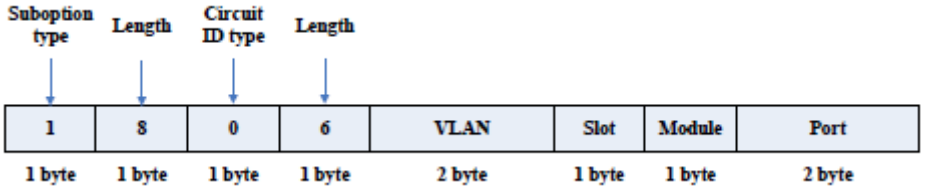
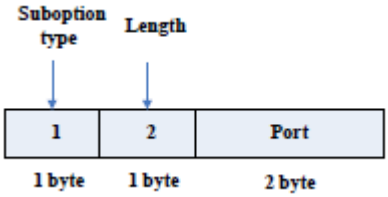
Syntax	**ip dhcp snooping information option self-defined subscriber-id format [ascii | hex]**	
Parameter	**hex**	hex means that the subscriber-id is the hexadecimal VLAN and port information
	ascii	acsii means that the subscriber-id is the ACSII VLAN and port information.
Default	ascii	
Mode	Global Mode	
Usage	Set self-defined format of circuit-id for snooping option82. self-defined format uses ip dhcp snooping information option type self-defined subscriber-id to create circuit-id format.	
Example	Set self-defined format of circuit-id as hex for snooping option82. Switch#config Switch(config)#ip dhcp snooping information option self-defined subscriber-id format hex	

ip dhcp snooping information option subscriber-id

Syntax	**ip dhcp snooping information option subscriber-id {standard | <circuit-id>}** **no ip dhcp snooping information option subscriber-id**	
Parameter	**standard**	standard means the standard format of VLAN name and physical port name, such as Vlan2+Ethernet1/0/12.
	<circuit-id>	***<circuit-id>*** means the circuit-id content of option 82 specified by users, its length can not exceed 64 characters.
Default	Use standard format to set circuit-id.	
Mode	Port mode	
Usage	Set the suboption1 (circuit ID option) content of option 82 added by DHCP request packets (they are received by the port). The no command sets the additive suboption1 (circuit ID option) format of option 82 as standard. The additive option 82 needs to associate with third-party DHCP server, it is used to specify the circuit-id content by user when the standard circuit-id format can not satisfy server's request.	
Example	Set the suboption circuit-id of DHCP option82 as P2. Switch#config Switch(config)#interface ethernet 1/0/1 Switch(config-if-ethernet1/0/1)#ip dhcp snooping information option subscriber-id P2	

ipv6 dhcp snooping information option subscriber-id format

Syntax	**ip dhcp snooping information option subscriber-id format {hex | ascii | vs-hp}**

Parameter	**hex**	hex means that subscriber-id is VLAN and port information with hexadecimal format
	ascii	acsii means that subscriber-id is VLAN and port information with ACSII format.
	vs-hp	vs-hp means that subscriber-id is compatible with the format of HP manufacturer.
Default	ascii	
Mode	Global Mode	
Usage	This command is used to set subscriber-id format of DHCP snooping option82. VLAN and port information with ASCII format, such as Vlan1+Ethernet1/0/11, VLAN and port information with hexadecimal format defined as below:  VLAN field fill in VLAN ID. For chassis switch, Slot means slot number, for box switch, Slot is 1; default Module is 0; Port means port number which begins from 1. The compatible subscriber-id format with HP manufacturer defined as below:  Port means port number which begins from 1.	
Example	Set subscriber-id format of DHCP snooping option82 as hexadecimal format. Switch#config Switch(config)#ip dhcp snooping information option subscriber-id format hex	

ip dhcp snooping limit-rate

Syntax	**ip dhcp snooping limit-rate <pps>** **no ip dhcp snooping limit-rate**	
Parameter	**<pps>**	The number of DHCP messages transmitted in every minute, ranging from 0 to 100. Its default value is 100. 0 means that no DHCP message will be transmitted.
Default	The default value is 100.	
Mode	Global Mode	
Usage	Set the DHCP message rate limit After enabling DHCP snooping, the switch will monitor all the DHCP messages and implement software transmission. The software performance of the switch is relative to the type of the switch, its current load and so on.	
Example	Set the message transmission rate as 50pps.	

	Switch#config Switch(config)# ip dhcp snooping limit-rate 50

ip dhcp snooping trust

Syntax	**ip dhcp snooping trust** **no ip dhcp snooping trust**
Parameter	**none**
Default	By default, all ports are non-trusted ports
Mode	Port mode
Usage	Set or delete the DHCP Snooping trust attributes of a port. Only when DHCP Snooping is globally enabled, can this command be set. When a port turns into a trusted port from a non-trusted port, the original defense action of the port will be automatically deleted; all the security history records will be cleared (except the information in system log)
Example	Set port ethernet1/0/1 as a DHCP Snooping trusted port Switch#config Switch(config)#interface ethernet 1/0/1 switch(config- ethernet 1/0/1)#ip dhcp snooping trust

ip dhcp snooping vlan

Syntax	**ip dhcp snooping vlan (WORD)** **no ip dhcp snooping vlan (WORD)**	
Parameter	**WORD**	VLAN ID
Default	Disable	
Mode	Global Mode	
Usage	Enable the dhcp snooping in vlan. **no ip dhcp snooping vlan <vlan-id>** means to disable the dhcp snooping function on the appointed vlan.	
Example	Enable DHCP snooping function. Switch#config Switch(config)#ip dhcp snooping vlan 10 Switch(config)#no ip dhcp snooping vlan 10	

ip user helper-address

Syntax	**ip user helper-address <svr_addr> [port <udp_port>] source <src_addr> [secondary]** **no ip user helper-address [secondary]**	
Parameter	**<svr_addr>**	The IP address of HELPER SERVER IP in dotted-decimal notation
	<udp_port>	The UDP port of HELPER SERVER, the range of which is1－

		65535, and its default value is 9119.
	<src_addr>	The local management IP address of the switch, in dotted-decimal notation.
	[secondary]	Whether it is a secondary SERVER address.
Default	There is no HELPER SERVER address by default.	
Mode	Global Mode	
Usage	Set the address and port of HELPER SERVER. DHCP SNOOPING will send the monitored binding information to HELPER SERVER to save it. If the switch starts abnormally, it can recover the binding data from HELPER SERVER. The HELPER SERVER function usually is integrated into DCBI packet. The DHCP SNOOPING and HELPER SERVER use the UDP protocol to communicate, and guarantee the arrival of retransmitted data. HELPER SERVER configuration can also be used to sent DOT1X user data from the server, the detail of usage is described in the chapter of dot1x configuration. Two HELPER SERVER addresses are allowed, DHCP SNOOPING will try to connect to PRIMARY SERVER in the first place. Only when the PRIMARY SERVER is unreachable, will the switch c HELPER SERVER connects to SECONDARY SERVER. **Please pay attention:** source address is the effective management IP address of the switch, if the management IP address of the switch changes, this configuration should be updated in time.	
Example	Set the local management IP address as 100.1.1.1, primary HELPER SERVER address as 100.1.1.100 and the port as default value. Switch#config switch(config)#interface vlan 1 Switch(config-if-vlan1)#ip address 100.1.1.1 255.255.255.0 switch(config-if-vlan1)exit switch(config)#ip user helper-address 100.1.1.100 source 100.1.1.1	

ip user private packet version two

Syntax	**ip user private packet version two** **no ip user private packet version two**
Parameter	**none**
Default	The switch choose private packet version one to communicate with DCBI.
Mode	Global Mode
Usage	The switch choose private packet version two to communicate with trustview. If the DCBI access control system is applied, the switch should be configured to use private protocol of version one to communicate with the DCBI server. However, if TrustView is applied, version two should be applied.
Example	To configure the switch choose private packet version two to communicate with inter security management background system. Switch#config Switch(config)#ip user private packet version two

show ip dhcp snooping

Syntax	**show ip dhcp snooping [interface [ethernet] <interfaceName>]**
Parameter	**<interfaceName>** The name of the specific port.
Default	none
Mode	Admin and Configuration Mode
Usage	If there is no specific port, then display the current cofiguration information of dhcp snooping, otherwise, display the records of defense actions of the specific port
Example	Switch#show ip dhcp snooping User primary helper server 1.1.1.1:9119, source 100.1.1.1, socket 0 seq no 0, connection 0, retry 0, renew 0, binding count 0 00:00:00 retry, 01:16:57 keep alive, 00:00:00 dead Get PrivateDESMD5 Ack 0, Get FreeResource Ack 0, Get HttpRedirPage Ack 0, Get Binding Ack 0 DHCP Snooping is enabled DHCP Snooping maxnum of action info:100 DHCP Snooping limit rate is 100 pps, switch ID 10-f0-13-f1-72-3a DHCP Snooping droped packets 0, discarded packets 0 DHCP Snooping alarm count 0, binding count 1, static binding count 1, from shell 1, from server 0 expired binding 0, request binding 0

interface	trust	action	recovery	alarm num	bind num
Ethernet1/0/1	trust	none	0	0	0
Ethernet1/0/2	untrust	none	0	0	0
Ethernet1/0/3	untrust	none	0	0	0
Ethernet1/0/4	untrust	none	0	0	0
Ethernet1/0/5	untrust	none	0	0	0
Ethernet1/0/6	untrust	none	0	0	0
Ethernet1/0/7	untrust	none	0	0	0
Ethernet1/0/8	untrust	none	0	0	0
Ethernet1/0/9	untrust	none	0	0	0
Ethernet1/0/10	untrust	none	0	0	0
Ethernet1/0/11	untrust	none	0	0	0
Ethernet1/0/12	untrust	none	0	0	0
Ethernet1/0/13	untrust	none	0	0	0
Ethernet1/0/14	untrust	none	0	0	1
Ethernet1/0/15	untrust	none	0	0	0
Ethernet1/0/16	untrust	none	0	0	0
Ethernet1/0/17	untrust	none	0	0	0
Ethernet1/0/18	untrust	none	0	0	0
Ethernet1/0/19	untrust	none	0	0	0
Ethernet1/0/20	untrust	none	0	0	0
Ethernet1/0/21	untrust	none	0	0	0
Ethernet1/0/22	untrust	none	0	0	0
Ethernet1/0/23	untrust	blackhole	30	0	0

Ethernet1/0/24	untrust	none	0	0	0
Ethernet1/0/25	untrust	none	0	0	0
Ethernet1/0/26	untrust	none	0	0	0
Ethernet1/0/27	untrust	none	0	0	0
Ethernet1/0/28	untrust	none	0	0	0

Displayed Information	Explanation
DHCP Snooping is enable	Whether the DHCP Snooping is globally enabled or disabled.
DHCP Snooping binding arp	Whether the ARP binding function is enabled.
DHCP Snooping maxnum of action info	The number limitation of port defense actions
DHCP Snooping limit rate	The rate limitation of receiving packets
switch ID	The switch ID is used to identify the switch, usually using the CPU MAC address
DHCP Snooping droped packets	The number of dropped messages when the received DHCP messages exceeds the rate limit.
discarded packets	The number of discarded packets caused by the communication failure within the system. If the CPU of the switch is too busy to schedule the DHCP SNOOPING task and thus can not handle the received DHCP messages, such situation might happen.
DHCP Snooping alarm count:	The number of alarm information.
binding count	The number of binding information.
expired binding	The number of binding information which is already expired but has not been deleted. The reason why the expired information is not deleted immediately might be that the switch needs to notify the helper server about the information, but the helper server has not acknowledged it.
request binding	The number of REQUEST information
interface	The name of port
trust	The truest attributes of the port
action	The automatic defense action of the port
recovery	The automatic recovery time of the port
alarm num	The number of history records of the port automatic defense actions
bind num	The number of port-relative binding information.

show ip dhcp snooping binding all

Syntax	**show ip dhcp snooping binding all**
Parameter	**none**
Default	none
Mode	Admin and Configuration Mode
Usage	This command can check the global binding information of DHCP snooping, each table entry includes the corresponding MAC address, IP address, port name, VLAN ID and the flag of the binding state. Besides, DHCP Snooping must be enabled globally, this command can be configured.
Example	Switch#show ip dhcp snooping binding all ip dhcp snooping static binding count:1, dynamic binding count:0 MAC IP address Interface Vlan ID Flag ---------- 00-11-22-33-44-55 1.1.1.1 Ethernet1/0/14 1 SE ----------

show trustview status

Syntax	**show trust status**
Parameter	**none**
Default	none
Mode	Admin and Configuration Mode
Usage	This command can be used for debugging the communication messages between the switch and the TrustView server, messages such as protocol version notification, encryption negotiation, free resource and web URL redirection, and the number of forced log-off messages, as well as the number of forced accounting update messages, can be displayed.
Example	Switch#show trustview status Primary trustview Server 1.1.1.1:9119 trustview version2 message inform failed trustview inform free resource failed trustview inform web redirect address failed trustview inform user binding data failed trustview version 2 message encrypt/digest not enabled Rcvd 0 force log-off packets Rcvd 0 force accounting update packets using version two private packet

ip dhcp snooping information enable

Syntax	**ip dhcp snooping information enable** **no ip dhcp snooping information enable**
Parameter	**none**
Default	Option 82 function is disabled in DHCP Snooping by default.
Mode	Global Mode

Usage	Only by implementing this command, can DHCP Snooping add standard option 82 to DHCP request messages and forward the message. The format of option1 in option 82 (Circuit ID option) is standard vlan name plus physical port name, like “vlan1+ethernet1/0/12”. That of option2 in option 82 (remote ID option) is CPU MAC of the switch, like “00030f023301”. If a DHCP request message with option 82 options is received, DHCP Snooping will replace those options in the message with its own. If a DHCP reply message with option 82 options is received, DHCP Snooping will dump those options in the message and forward it.
Example	Enable option 82 function of DHCP Snooping on the switch. Switch#config Switch(config)#ip dhcp snooping enable Switch(config)#ip dhcp snooping binding enable Switch(config)#ip dhcp snooping information enable